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VOL. XXIII.

FEBRUARY AND MAY, 1857.

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Contents.

No. XLV.—FEBRUARY 1, 1857.

Part I.—ORIGINAL COMMUNICATIONS.

Page.

Art. I.—Second Memoir on Excision of the Knee-Joint; to which is appended a remarkable Example of the Powers of Operative Surgery in saving the same Articulation. By Richard G. H. Butcher, Esq., M. R. I. A., F. R. C. S. I., Examiner in Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery, &c., &c. 1

Art. II.—On Syphilization. By Wilhelm Boeck, M. D., Professor of Medicine at the University of Norway, ... 77

Art. III.—Essays on Syphilis. No. I. In which an Attempt is made to ascertain the true value of Inoculation as a means of Diagnosis, &c. By William Henry Porter, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital, &c., &c., . 88

Art. IV.—On the 'Measle' of the 'Pig,' and on the Wholesomeness, as Food for Man, of 'Measly' Pork. By Alexander Fleming, M. D., Professor of Materia Medica, Queen's University, Ireland, ... 100

Art. V.—On the Resection of both Upper Jaw-Bones. By Dr. Oscar Heyfelder, Private Lecturer on Surgery and Ophthalmic Medicine in the University of Munich; Member of the Academy of Naturalists at Breslau, and the Academy of Surgery at Madrid; of the Medical Societies at Vienna, Paris, Leipzig, Munich, Strasburgh, Brussels, Erlangen, Valencia; of Legal Medicine in Baden; and of the Surgical and Anatomical Society at Paris, ... 107

Art. VI.—Cases of Vesico-vaginal Fistula; with Remarks. By Maurice H. Collis, M. B., F. R. C. S. (by Examination); Surgeon to the Meath Hospital; Lecturer on Surgery, Dublin School of Medicine, ... 119

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Page.

1. Traité d'Anatomie Topographique Médico-Chirurgicale. Considérée Spécialement dans ses Applications a la Pathologie, a la Médecine légale, a l'Art obstetrical, et a la Chirurgie operatoire. Par J.-E. Petrequin, Ex-Chirurgien en chef de l'Hotel-Dieu de Lyon. Deuxième Edition, ... 133

2. Lectures on the Principles and Methods of Medical Observation and Research; for the use of advanced Students and junior Practitioners. By Thomas Laycock, M. D., &c., Professor of the Practice of Medicine and of Clinical Medicine in the University of Edinburgh, ... 145

3. Recent Works on Ophthalmology, ... 153

   I. Outlines of Ophthalmology. Third Edition. To which is prefixed an Introductory Discourse on the Causes which have rendered the Eye a separate object of Medical Study. By W. Mackenzie, M. D., Surgeon Oculist in Scotland in Ordinary to Her Majesty, &c.

   II. Defects of Sight, their Nature, Causes, Prevention, and General Management. By T. Wharton Jones, F. R. S., F. R. C. S., &c.

4. The Science of Mind; or, Pneumatology, ... 156

5. On the Constitutional Treatment of Female Diseases. By Edward Rigby, M. D., &c., &c., ... 162

6. Du Siége commun de l'Intelligence, de la Volonté et de la Sensibilité chez l'Homme. Par Max Parchappe, Inspecteur General de 1^{re} Classe des Établissments d'Aliénés, &c. Première Partie: Preuve Pathologique, ... 174

7. Children's Diseases. First Report of the Clinical Hospital for Diseases of Children, Stevenson-square, Manchester. Containing an Account of the Results of the first 530 Patients there treated. By A. L. Merei, M. D., &c., and J. Whitehead, M. D., &c. 182

8. On Uterin-Deviationer. Af Dr. F. C. Faye, Professor i Accouchement, Fruentimmer-og Börnesygdomme, ved Norges Universitet, ... 185

   On Uterine Deviations. By Dr. F. C. Faye, Professor of Midwifery and the Diseases of Women and Children in the University of Norway. Reprint.

9. Recent Works on Calisthenics, ... 186

   I. Calisthenics; or, the Elements of Bodily Culture. By Henry de Laspée.

   II. A New System of Calisthenic Exercises. By Henry Cost.

10. Quarante Années de Pratique Chirurgicale. Par Ph. J. Roux. Tome second, Maladies des Artères, ... 189

Page.
11. Supplement to Lizars' Anatomical Plates of the Human Body. Accompanied with Letter-press Descriptions and Letters of Reference to the Plates. By John Lizars, F. R. S. E., &c., . 195
12. A Treatise on Therapeutics and Pharmacology, or Materia Medica. By G. B. Wood, M. D., &c., ... 196
13. Pathological Chemistry, in its application to the Practice of Medicine. Translated from the French of MM. Becquerel and Rodier. By Stanhope Templeman Speer, M. D., ... 202

Part III.—MEDICAL MISCELLANY.

Transactions of the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland:—

Dr. Neligan's Case of Dactylostrangalis, ... 212
Dr. H. Kennedy's Case of Scarlatina, ... 212
Dr. Aquilla Smith's Case of Hematuria followed by Suppression of Urine, ... 213
Dr. Moore's Observations on Gout, ... 215

Proceedings of the Dublin Obstetrical Society:—

Dr. M'Clintock's Examples of Fœtal Lesions, ... 218

Transactions of the County and City of Cork Medical and Surgical Society:—

Dr. Finn's Case of Double Aneurism of the Thoracic Aorta, ... 221
Dr. Harvey's Case of Laceration of the Aorta, ... 223
Professor O'Connor's Two Cases of Poisoning by Tincture of Aconite, ... 224
Dr. Corbett on the Effects of Oil of Fern in a Case of Tapeworm, ... 226

Selections from Foreign Periodicals:—

Professor Hebra's Clinique for Diseases of the Skin at Vienna. (Taken from the Official Report of Dr. B. Schelle during his stay in Vienna through the winter half-year 1855–56), ... 229
On Myelitis, with Phenomena of an Affection of the Chest. By J. L. C. Schroeder van der Kolk, ... 233
On two Cases of Tonic Spasms in the Hands and Feet. By Chr. Tobiesen, Practising Physician in Farsund, . . 239
On the Endermic Employment of Ioduretted Glycerine. By Dr. Ferdinand Szukits, Assistant Physician to the Section for Diseases of Women in the Hospital at Vienna, 244
A Case of Myopathic Luxation. From a work to be shortly published on Myopathic Paralysis: "Paralysis ex alienata Musculorum Nutritione." By Dr. Hermann Friedberg, of Berlin, ... 249

Notices in List of Books Received.

Syme's Surgery. Kirkes' Physiology. Transactions of Pathological Society of London. Guy's Hospital Reports. Lawrence on Cancer. Williams' Principles of Medicine. Harrison on Ulcer of the Stomach. Reeves on Stomach Diseases. Ballard on Artificial Digestion. Swayne's Obstetric Aphorisms. Saunders' Hygienic Hints. Bedford's Diseases of Women. Maclise's Surgical Anatomy. Savory's Domestic Medicine. Fuller on Rheumatism. Piggott on Harrogate. Bergson on Asthma. Todd and Bowman's Physiology. Liverpool Medical Journal. Irish Medical Directory. Beale's Chemical Tables. Catalogue of Toynbee's Museum.

BOOK RECEIVED.

1. The Principles of Surgery. By James Syme, F. R. S. E., Professor of Clinical Surgery in the University of Edinburgh. Fourth Edition. London: Murray, 1856. 8vo. pp. 486.

> [*Professor Syme has carefully prepared this edition of his well-known work, long so great a favourite with the students of the Edinburgh School, wishing it to be regarded as the exponent of his matured views in many disputed points of surgical practice. The style is clear, forcible, and expressive; and though we do not coincide in many of his opinions, we must, in justice, say, that the book may be, with advantage, consulted by all practising surgeons.*]

2. Researches on Pathological Anatomy and Clinical Surgery. By J. S. Gamgee, Staff Surgeon of the First Class, &c. London: Bailliere, 1856. 8vo. pp. 216.

> [*In our next.*]

3. A Treatise on Therapeutics and Pharmacology, or Materia Medica. By G. B. Wood, M. D., &c. Philadelphia: Lippincott and Co., 1856. Two Volumes. 8vo. pp. 840 and 901.

4. Handbook of Physiology. By W. S. Kirkes, M. D., &c. With Illustrations on Steel and Wood. Third Edition. London: Walton and Maberly, 1856. Post 8vo. pp. 747.

> [*This is a new and very much improved edition of Dr. Kirkes' well-known Handbook of Physiology. Originally constructed on the basis of the admirable treatise of Müller, it has in successive editions developed itself into an almost original work, though no change has been made in the plan or arrangement. It combines conciseness with completeness, and is, therefore, admirably adapted for consultation by the busy practitioner.*]

5. Transactions of the Pathological Society of London. Volume Seventh. Including the Report of the Proceedings for the Session 1855–56. 8vo. pp. 420.

> [*We cannot speak in terms too high of these Transactions, and of the credit which their publication confers on the Officers of the Society to whose charge it is intrusted. Each succeeding volume rivals its predecessor in the variety and novelty of the contents, and in the style of its getting-out.*]

6. Guy's Hospital Reports. Edited by L. Wilks, M. D., and Alfred Poland. Third Series. Vol. II. London: Churchill, 1856. 8vo. pp. 428.

> [*Among the other valuable essays contained in these Reports is an admirable and most complete paper by Professor Taylor on Poisoning by Strychnia, illustrated by a full report of the notorious case of Palmer, and a commentary on the medical evidence given at the trial. We entirely coincide in the views herein put forth by the celebrated author.*]

7. The British Journal of Homœopathy. October, 1856. No. LVIII. London: Groombridge and Sons.

8. Illustrations of the Pathology of Cancer. By J. Z. Lawrence, F. R. C. S. London: Richards, 1856. Fcap. 8vo. pp. 59.

> [*An excellent little essay, in which an attempt is made to clear up some of the obscurity that still envelopes this fatal disease.*]

9. Principles of Medicine. An Elementary View of the Causes, Nature, Treatment, Diagnosis, and Prognosis of Disease. With brief Remarks on Hygienics, or the Preservation of Health. By C. J. B. Williams, M. D., F. R. S. Third Edition. London: Churchill, 1856. 8vo. pp. 603.

> [*Dr. Williams' book has now become so deservedly one of the medical classics of the present century, and is so generally in the hands of the profession, as not to require from us a word of praise. In preparing the present edition for the press, the author acknowledges to have received valuable assistance from a former pupil of his, Dr. R. J. Mann.*]

10. Lectures on the Principles and Methods of Medical Observation and Research, for the Use of Advanced Students and Junior Practitioners. By Thomas Laycock, M. D., &c., Professor of the Practice of Medicine in the University of Edinburgh. Edinburgh: A. and C. Black, 1856. 12mo. pp. 223.

11. A Few Remarks on the Perforating Ulcer of the Stomach and Bowels. By J. Bower Harrison, M. D., &c., Manchester. London: Churchill, 1856. Fcap. 8vo. pp. 68.

> [*A very useful contribution to the literature of this serious form of disease of the stomach, especially with reference to treatment.*]

12. Diseases of the Stomach and Duodenum. By C. E. Reeves, B. A., M. D., &c. London: Simpkin, Marshall, and Co., 1856. 12mo. pp. 354.

> [*Of late years no subject has been so much or so well written on, as stomach affections, and, therefore, we do not see any grounds for the publication of this book, which contains neither novelty nor originality. The author states his object has been to present to* the world *a comprehensive work; but we venture to conjecture that his intentions have been directed rather by personal than philanthropic motives.*]

13. On Artificial Digestion, as a Remedy in Dyspepsia, Apepsia, and their Results. By E. Ballard, M. D., &c. London: Walton and Maberly, 1857. Pamphlet, pp. 46.

> [*Dr. Ballard has, in this little essay, given a very favourable notice of what promises to be a useful addition to our remedies for the treatment of indigestion. We shall take an early opportunity of bringing it more fully under the notice of our readers.*]

14. Supplement to Lizars' Anatomical Plates of the Human Body. Accompanied with Letter-press Descriptions and Letters of Reference to the Plates. By John Lizars, F. R. S. E., &c. Edinburgh: W. H. Lizars, 1856. Folio. pp. 13. Plates 10.

15. Traité d'Anatomie Topographique Médico-Chirurgicale. Considérée Spécialement dans ses Applications a la Pathologie, a la Médecine légale, a l'Art Obstetrical, et a la Chirurgie Opératoire. Par. J.-E. Petrequin, Ex-Chirurgien en chef de l'Hotel-Dieu de Lyon. Deuxième Edition. Paris: Masson, 1857. Royal 8vo. pp. 763.

16. Investigations into the Primary Laws which determine and regulate Health and Disease. By Jacob Dixon. London: Piper, Stephenson, and Spencer, 1856. Pamphlet, pp. 24.

17. Obstetric Aphorisms for the Use of Students commencing Midwifery Practice. By J. G. Swayne, M. D., &c. London: Churchill, 1856. Post 8vo. pp. 124.

> [*A very useful little book for the Midwifery Student, giving him sufficient indications as to when he may undertake a case of labour without seeking for assistance, and when he should not hesitate to send for it.*]

18. Hygienic, Medical, and Surgical Hints for Young Officers of the Royal and of the Merchant Navy. By W. M. Saunders, M. D., Surgeon R. N. London: Churchill, 1856. Post 8vo. pp. 96.

> [*A useful little manual for junior medical officers at sea, containing many valuable hints as to the hygienic precautions which should be adopted for the preservation of their own health and of that of the men under their charge.*]

19. The Introductory Address delivered at St. Bartholomew's Hospital on the Opening of the Medical Session, October 1, 1856. By A. M. M'Whinnie, F. R. C. S. London: Churchill, 1856. Pamphlet, pp. 43.

20. Clinical Lectures on the Diseases of Women and Children. By Gunning L. Bedford, M. D., &c. Fourth Edition, carefully revised and enlarged. New York: S. S. and W. Wood, 1856. 8vo. pp. 602.

> [*A new and improved edition of a book on which we freely expressed our opinion in a review of it in our twentieth volume.*]

21. Surgical Anatomy. By Joseph Maclise, F. R. C. S. London: Churchill, 1856. Folio. Fasciculus xiii.

> [*This Part completes the new edition of Mr. Maclise's Illustrations of Surgical Anatomy; it is improved in every respect, and the extremely low price at which it is presented to the profession entitles Mr. Churchill, the publisher, to our warmest thanks.*]

22. Outlines of Ophthalmology. Third Edition. To which is prefixed an Introductory Discourse on the Causes which have rendered the Eye a separate object of Medical Study. By W. Mackenzie, M. D., Surgeon Oculist in Scotland in Ordinary to Her Majesty, &c. London: Longmans, 1856. 12mo. pp. 72.

23. On the Constitutional Treatment of Female Diseases. By E. Rigby, M. D., &c. London: Renshaw, 1857. Post 8vo. pp. 324.

24. The Mechanism of the Gubernaculum Testis; with an Introductory Sketch of the Development of the Testes, and an Appendix on the purpose of their descent from the Abdomen. By John Cleland, M. D. Prize Thesis. Edinburgh: Maclachlan and Stewart, 1856. 8vo. pp. 40.

[*In our next.*]

25. Defects of Sight, their Nature, Causes, Prevention, and General Management. By T. Wharton Jones, F. R. S., F. R. C. S., &c. London: Churchill, 1856. Fcap. 8vo. pp. 149.

26. The Stomach and its Difficulties. By Sir James Eyre, M. D., &c. Fourth Edition. London: Churchill, 1856. Fcap. 8vo. pp. 162.

27. A Compendium of Domestic Medicine, and Companion to the Medicine Chest, &c., &c. By John Savory. Fifth Edition. London: Churchill, 1856. 12mo. pp. 364.

> [*Of the several books of this class, which we regard as a sort of necessary evil, this, perhaps, is the one least open to objection by the profession.*]

28. The Change of Life in Health and Disease. A Practical Treatise on the Nervous and other Affections Incidental to Women at the Decline of Life. By E. J. Tilt, M. D. Second Edition. London: Churchill, 1857. 8vo. pp. 307.

[*In our next.*]

29. Pathological Chemistry, in its Application to the Practice of Medicine. Translated from the French of MM. Becquerel and Rodier. By Stanhope Templeman Speer, M. D., &c. London: Churchill, 1857. 8vo. pp. 566.

30. On Rheumatism, Rheumatic Gout, and Sciatica. By H. W. Fuller, M. D., &c. Second Edition. London: Churchill, 1856. 8vo. pp. 464.

[*The author has carefully revised this new edition of his work, which, although we differ from him in many points, we must still regard as the most complete treatise in the English language on the obstinate affections which are considered in it.*]

31. The Relation of Drugs to Treatment. An Introductory Lecture before the Medical Classes of 1856–57 of Harvard University. By E. H. Clarke, M. D., Professor of Materia Medica. Boston, U. S.: Clapp, 1856. 8vo. pp. 28.

32. An Introduction to Clinical Study; or, an Interpretation of Symptoms and Signs. A Manual adapted to the Use of the Hospital Student. By the late A. G. Malcolm, M. D., &c. Belfast: Greer, 1856. 8vo. pp. 150.

[*In our next.*]

33. The Prostate Gland, and its Enlargement in Old Age. By Decimus Hodgson, M. D., &c. London: Churchill, 1856. Royal 8vo. pp. 84.

[*In our next.*]

34. Discovery of the Causes, Nature, Cure, and Prevention of Epidemic Cholera. By M. L. Knapp, M. D., &c. Cincinnati, U. S., 1855. Pamphlet, pp. 48.

35. On the Theory of Final Causes; two Letters addressed by Dr. M'Cormac to the Editor of the "Leader" Newspaper. Belfast: Shepherd and Aitchison, 1857. Pamphlet, pp. 8.

36. On the Harrogate Spas and Change of Air. Exhibiting a Medical Commentary on the Waters, founded on Professor Hofmann's Analysis. A New and Enlarged Edition. By G. West Piggott, M. D. Cantab., &c. London: Churchill, 1856. 12mo. pp. 280.

[*We strongly recommend Dr. Piggott's little Hand-book to all seeking for information on the most renowned of the English watering-places. The author conveys much information in it, in a light and pleasing style.*]

37. Recherches sur l'Asthme. Memoria del Signor Dottore Giuseppe Bergson, Medico di Berlino, in riposta al Quesito riproposto dall J. R. Istituto Lombardo di Scienze, Lettere et Arti. Premiata nei Concorso Biennale dell' anno, 1854. Milan: G. B. di Giovanni, 1855. 4to. pp. 173.

[*This is a full development of a treatise on Spasmodic Asthma, which we reviewed at length in our tenth volume.*]

38. The Physiological Anatomy and Physiology of Man. By R. B. Todd, F. R. S., &c., and W. Bowman, F. R. S., &c. Part IV., Section II. London: Parker and Sons, 1857. 8vo. pp. 409 to 660.

[*This completes one of our most important books on Physiology, the value of which is, however, very much marred by the publication in Parts having now extended over a period of, we believe, at least ten or twelve years.*]

39. Children's Diseases. First Report of the Clinical Hospital for Diseases of Children, Stevenson-square Manchester, containing an Account of the Results of the first 530 patients there treated. By A. L. Merei, M. D., &c., and J. Whitehead, M.D., &c. Manchester: Bradshaw and Blacklock, 1856. 8vo. pp. 52.

40. The Liverpool Medico-Chirurgical Journal, No. I., January, 1857. Liverpool: Walmsley. To be Published Quarterly.

[*We cordially welcome the appearance of a new contemporary in the chief provincial town of England. The getting-up of this, the first Number, augurs well for its future success, and is a good evidence of the energy of its conductors.*]

41. The Medical Directory for Ireland, 1857. London: Churchill. 12mo. pp. 260.

[*We regret to be compelled to state that there are many errors, both of omission and commission, in the Irish Medical Directory for this year, and we would consequently suggest to the Editors the necessity of obtaining some assistance on this side of the channel to aid in its future revision.*]

42. The British Journal of Homœopathy. No. LIX., January 1, 1857. London: Groombridge and Sons.

43. Tables for the Chemical and Microscopical Examination of Urine in Health and Disease. By Dr. Lionel Beale. London: Churchill, 1856. 8vo. pp. 24.

[*A useful and convenient supplement to the author's work on the Microscope and to Mr. Bowman's Medical Chemistry; it may be also used by itself as a help to the memory in the examination of urine and urinary calculi.*]

44. An Essay on the Therapeutical Effect of Purgatives on the Horse. Read before the Veterinary Medical Association of London. Session 1855–56, to which was awarded the Society's Silver Medal. By John Field, M.R.C.V.S. London: Longman, 1856. 8vo. pp. 50.

45. Ueber die Kumiss–Kur. Mitgetheilt von Hofrath Dr. L. Spengler zu Bad Ems. Wetzlar G. Rathgeber, 1856. Pamphlet, pp. 16.

46. On the Treatment of Iritis without Mercury. By Henry W. Williams, M. D. Reprint. Boston, U. S.: Clapp, 1856. Pamphlet, pp. 24.

47. A Descriptive Catalogue of Preparations illustrative of the Diseases of the Ear, in the Museum of Joseph Toynbee, F. R. S. London: Churchill, 1857. 8vo. pp. 127.

[*This imposing-looking volume is merely a dry detail of morbid anatomy, calculated, however, to show the author's industry in the special department of Surgery to which he has devoted himself.*]

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review and Journal of ractical Medicine. Published Quarterly. London: Churchill. (Received regularly.)

2. The Edinburgh Medical Journal. Published Monthly. Edinburgh: Sutherland and Knox. (Received regularly.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received regularly.)

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Published Monthly. London: Taylor and Francis. (Received regularly.)

7. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

8. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)

9. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)

10. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)

11. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)

12. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)

13. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

14. The Dublin Medical Press. Published Weekly. (Received regularly.)

15. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

16. The Natural History Review: including the Transactions of the Irish Natural History Societies, and of the Geological Society of Dublin. Published Quarterly. Dublin: Hodges, Smith and Co. (Received regularly.)

INDIA.

17. The Indian Annals of Medical Science; or, Half-Yearly Journal of Practical Medicine and Surgery. Calcutta: Lepage and Co. (No. VI. received.)

18. Transactions of the Medical and Physical Society of Bombay. Printed at the Bombay Education Society's Press. (Received No. 2, New Series, for the Years 1853 and 1854.)

AUSTRALIA.

19. The Australian Medical Journal. Melbourne: Buzzard. Published Quarterly. (Received Nos. 1, 3, and 4.)

AMERICA.

20. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Blanchard and Lea. (Received regularly.)

21. The Medical Examiner and Record of Medical Science. Edited by S. L. Hollingsworth, M. D. Published Monthly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

22. The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. Purple, M. D., and S. Smith, M. D. Published Monthly. New York. (Received No. 2, of the New Series, only.)

23. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bimonthly. New Haven. (Received regularly.)

24. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (No. 1, Vol. XIII., not received.)

25. The American Journal of Dental Science. Edited by C. A. Harris, M. D., A. A. Blandy, M. D., and A. S. Piggot, M. D. Published Quarterly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

26. The Charleston Medical Journal. Published Monthly. Charleston, U. S. (Received regularly.)

FRANCE.

27. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

28. Gazette Hebdomadaire de Médecine et de Chirurgie. Published Weekly. Paris: Victor Masson. (Received regularly.)

29. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Published Monthly. Paris: Labé. (Received regularly.)

30. Journal de Pharmacie et de Chimie, &c. Published Monthly. Paris: Victor Masson. (Received regularly).

31. L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionels du Corps médical. Published three times a Week. Paris. (Received regularly.)

32. La Lancette Française, Gazette des Hôpitaux civils et militaires. Published three times a Week. Paris. (Received regularly.)

33. Le Moniteur des Hôpitaux, Revue Médico-Chirurgicale de Paris. Redacteur en chef: M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

34. Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique. Published twice a Month. Par J. B. Cayol. Paris. (Received regularly.)

35. Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales. Published Monthly. Paris: Labé. (Received regularly.)

36. Bulletin de l'Académie de Médecine. Published Monthly. Paris: Baillière. (Received Vol. XXI.)

37. Mémoires de l'Académie de Médecine. (Received regularly.)

38. Revue de Thérapeutique Médico-Chirurgicale. Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

39. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecins. Published Monthly. Par Lucas Championnière. Paris. (Received regularly.)

40. Journal des Connaissances Médicales pratiques et de Pharmacologie. Published every ten days. Paris. (Received regularly.)

41. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Published Quarterly. Paris: Victor Masson. (Received regularly.)

42. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil pratique. Publiée par le Docteur Debout. Published twice a Month. Paris. (Received regularly, except the 1st No. for July.)

43. Repertoire de Pharmacie. Recueil pratique. Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

44. Archives d'Ophthalmologie, comprenant les travaux les plus importants sur l'Anatomie, la Physiologie, la Pathologie, l'Hygiène et la Thérapeutique de l'Appareil de la Vision. Par M. A. Jamain, Docteur en Médecine, &c. Published Monthly. Paris. (Received regularly.)

45. Gazette Médicale de Strasbourgh. Published Monthly. (Received regularly.)

46. Revue Thérapeutique du Midi, &c. Par le Dr. Louis Saurel. Published twice a Month. Montpellier. (Received regularly.)

47. Journal de Médecine de Bordeaux. Redacteur en chef, M. Costes Published Monthly. (Received regularly.)

BELGIUM.

48. Annales D'Oculistique. Fondées par le Docteur Florent Cunier. Published Monthly. Brussels. (Received regularly.)

49. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

GERMANY.

50. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle and Dr. C. v. Pfeufer. Published Monthly. Heidelberg and Leipzig: C. F. Winter. (Received regularly.)

51. Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien. Redacteur: Professor, Dr. Ferdinand Hebra. Vienna: Gerold. (No. 12, for 1853, Nos. 3, 4, 6, 9, 10, 11, for 1854, and No. 1 for 1856, not received.)

52. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Prague: Karl André. (Received regularly.)

53. Annalen der Chemie und Pharmacie. Herausgegeben von F. Wöhler und J. Liebig. Published Monthly. Heidelberg: Winter. (Not received this quarter.)

54. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received regularly.)

55. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm and Enke. (Parts 3 and 4, 1854, 1 and 2, 1855, and 2, 1856, not received.)

56. Wochenblatt der Zeitschrift der Kaiserl. Königl. Gesellschaft der Aerzte zu Wien. Published Weekly. Vienna: Gerold. (Received regularly.)

57. Aerztliches Intelligenz-Blatt. Organ für Bayerns Staatliche und öffentliche Heilkunde. Munich: C. Kaiser. (Received regularly.)

PRUSSIA.

58. Archiv für pathologische Anatomie und Physiologie, &c., Herausgegeben von R. Virchow. Berlin: G. Reimer. Published Monthly. (Received regularly.)

HOLLAND.

59. Nederlandsch Lancet. Gravenhage: Noordendorpe. (Received regularly.)

NORWAY.

60. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund. Voss. Published Monthly. Christiania: Feilberg & Landmark. (Received regularly.)

SWEDEN.

61. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm. (Received regularly.)

DENMARK.

62. Bibliothek for Lœger. Udgivet af Direktionen for det Classenske Literaturselskab Redigeret af Dr. E. Dahlerup. Copenhagen: Reitzels. (Received Vol. V., No. 1.)

ITALY.

63. Gazzetta Medica Italiana Federativa Toscana. Florence. Published Weekly. (Received regularly.)

64. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (No. 2 for 1855, and Nos. 5, 6, and 7 for 1856, not received.)

65. Giornale Veneto di Scienze Mediche. Published Monthly. (Received regularly.)

Books and Periodicals published in Northern Europe and the German States, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. Trübner and Co., London," *through their Correspondents* in the principal Towns on the Continent. Our Correspondents in France, Belgium, Italy, and Spain, are requested to communicate with us through "Doctor Higgins, 212, Rue Rivoli, Paris."

THE

DUBLIN QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

Contents.

No. XLVI.—MAY 1, 1857.

Part I.—ORIGINAL COMMUNICATIONS.

Page.

Art. VII.—Essays on the Natural History of Syphilis. No. II. By William Henry Porter, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital, &c., &c., ... 257

Art. VIII.—Observations on some of the Complications of Fever. By A. Hudson, M. D., Fellow of the King and Queen's College of Physicians, late Physician to the Navan Fever Hospital, . . 271

Art. IX.—Observations on the Treatment of Stricture of the Urethra. By Samuel G. Wilmot, M. D., Surgeon to Steevens' Hospital, Lecturer on Surgery in the Carmichael School of Medicine, &c., &c., ... 310

Art. X.—Observations on the Human Crania contained in the Museum of the Army Medical Department, Fort Pitt, Chatham. By George Williamson, M. D., Staff Surgeon, Second Class, 325

Art. XI.—Selections from the Unpublished Manuscripts of the late Abraham Colles, Professor of Surgery to the Royal College of Surgeons of Ireland. Edited by his Son, William Colles, F. R. C. S. I., Surgeon to Steevens' Hospital, &c. (*continued from* vol. xxii. p. 43), ... 374

No. VIII.—On Diseases of the Genital Organs and Rectum: and on Brachial Aneurism.

Page.

ART. XII.—Practical Observations on Blistering the Cervix Uteri, as a remedial agent in the Treatment of certain diseased conditions of that Viscus. By ROBERT JOHNS, A. B., M. B., T. C. D., L. & F. R. C. S. I.; Member of Council of the Surgical Society of Ireland; late Consulting Accoucheur to St. Peter's Parochial Dispensary; Ex-Assistant Master to the Lying-in-Hospital, Dublin; Vice-President of the Obstetrical Society of Ireland; Member of the Zoological Society of Ireland; Chairman of the Midwifery Court of Examiners of the Royal College of Surgeons in Ireland; Consulting Accoucheur to the Anglesey Lying-in Hospital, &c., &c., ... 382

ART. XIII.—Modification of Professor Syme's "Staff Director" for Urethral Section in certain forms of Stricture. By CHRISTOPHER FLEMING, M. D., M. R. I. A., Surgeon to the Richmond Hospital; Examiner on Surgery in the Queen's University; Member of the Court of Examiners in the Royal College of Surgeons, Ireland, &c., ... 394

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Recent Works on the Mode of Descent of the Testicles, . . . 396

   I. The Mechanism of the Gubernaculum Testis. By John Cleland, M. D.

   II. Recherches sur les Monorchides et les Cryptorchides chez l'Homme. Par M. Ernest Godard.

2. A Review of the Present State of Uterine Pathology. By James Henry Bennet, M. D., &c., ... 402

3. On a true Parthenogenesis in Moths and Bees; a Contribution to the History of Reproduction in Animals. By Carl Theoder Ernst von Siebold, Professor of Comparative Anatomy in the University of Munich. Translated by Wm. Dallas, F. L. S., &c., &c., ... 413

4. An Introduction to Clinical Study; or, an Interpretation of Symptoms and Signs. A Manual adapted to the Use of the Hospital Student. By the late A. G. Malcolm, M. D., &c., . . 419

5. Cranial Presentations and Cranial Positions; Suggestions, Practical and Critical. By R. W. West, M. D., ... 423

6. The Prostate Gland, and its Enlargement in Old Age. By Decimus Hodgson, M. D. Edin., M. R. C. S. Eng., Demonstrator of Anatomy to the University of Glasgow, ... 424

7. Clinical Lectures on certain Diseases of the Urinary Organs, and on Dropsies. By Robert Bentley Todd, M. D., F. R. S., Physician to King's College Hospital, ... 432

8. Researches in Pathological Anatomy and Clinical Surgery. By Joseph S. Gamgee, one of the Surgical Staff of the Royal Free Hospital, &c., ... 440

Page.

9. On the Diseases of Women; including those of Pregnancy and Childbed. By Fleetwood Churchill, M. D. T. C. D., M. R. I. A., Professor of Midwifery to the King and Queen's College of Physicians, Ireland, &c., ... 446

10. On the Pathology, Symptoms, and Treatment of Ulcer of the Stomach; with an Appendix of Cases. By William Brinton, M. D., F. R. C. P., Physician to the Royal Free Hospital, &c., &c., ... 448

11. Report upon some of the more important points connected with the Treatment of Syphilis. By Holmes Coote, Assistant-Surgeon to St. Bartholomew's Hospital, &c., ... 459

12. Traité de l'Angine Glanduleuse, et Observations sur l'Action des Eaux-Bonnes dans cette affection, précédés de considérations sur les Diatheses. Par Noël Gueneau de Mussy, Médecin de l'Hopital de la Pitié, &c., ... 462

13. The Change of Life in Health and Disease: a Practical Treatise on the Nervous and other Affections Incidental to Women at the Decline of Life. By Edward John Tilt, M. D., Senior Physician to the Farringdon General Dispensary and Lying-in Charity, &c., &c., ... 464

14 The Functions and Disorders of the Reproductive Organs, in Youth, in Adult Age, and in Advanced Life: considered in their Physiological, Social, and Psychical Relations. By William Acton, late Surgeon to the Islington Dispensary, and formerly externe to the Venereal Hospitals, Paris, ... 469

Part III.—MEDICAL MISCELLANY.

Transactions of the County and City of Cork Medical and Surgical Society:—

Dr. Popham's Case of Rupture of the Left Ventricle of the Heart, ... 474

Professor O'Connor's Case of Caries of the Vertebræ, . . 475

Dr. Finn's Case of Empyema, ... 476

Dr. Cremen's Case of Cirrhosis of the Liver, ... 477

Dr. Sandham's Case of Intestinal Disease, ... 478

Dr. Cremen's Case of Phthisis with Development of Fat, 479

Dr. S. H. Hobart's Case of Tumour, ... 481

Dr. Cremen's Cases of Heart Disease, ... 483

Dr. Sandham's Case of Epilepsy, ... 483

Dr. Popham's Case of Hematemesis, ... 485

Professor O'Connor's Case of Partial Cicatrization of a Tubercular Cavity, ... 486

Selections from Foreign Periodicals:— Page.

On Cysts of the Ovary. By M. Saurel, ... 487

On Humanized and Original Lymph of Cow-pock used in the Imperial and Royal Vaccine Institution in Vienna; a Report laid before the Society of Physicians on the 15th of October, 1856. By Dr. Friedinger, House Surgeon to the Foundling Hospital, ... 489

On the Therapeutic Employment of the Pyrophosphate of Iron. By M. E. Robiquet. (Read before the Imperial Academy of Medicine of France, at their Sitting of the 10th of February, 1857), ... 494

On Quarantine in Cholera. By Baron Gustaf von Düben, 497

Contributions to the Theory of Epiphytes. By Dr. Edward Koch, of Würzburg, ... 498

Case of Pseudo-Scleroma in a Grown Person. By Dr. Alfonso Corradi, ... 503

Notices in List of Books Received.

Waring on the Diseases of India. Hall on Torquay. Bell on Abdominal Cellulitis. Leech on the Imprisonment of Drunkards. Jeanneret on Cholera. Ross on Vaccination. Lizars on Tobacco. Tholozan on the Diseases of the French Army. Simpson on Compressed Air. The Anatomical Remembrancer. Forbes on Nature and Art in Disease. Wilson on the Skin. Holland on the Hair. Bartlett on Fevers. Seaton on Vaccination. Miller's Address. Duncan on Ovariotomy. Coulson on the Bladder. Medical Statistics of the Dublin Police.

INDEX TO VOL. XXIII., ... 505

BOOKS RECEIVED.

1. Statistical Notes of some of the Diseases of India. By E. J. Waring, Madras Medical Service. Pamphlet, pp. 63.

> [*A very useful statistical contribution to the history and mortality of the following diseases—the most prevalent, perhaps, in India—Fevers, Dysentery, Hepatitis, Cholera, Beri-beri, Dracunculus, Tetanus and Puerperal Tetanus as it appears at Bombay, and Leprosy.*]

2. Torquay in its Medical Aspect as a Resort for Pulmonary Invalids. By C. R. Hall, M. D., &c. London: Churchill, 1857. 12mo. pp. 165.

> [*This is an excellent little Medical Hand-book to the most celebrated resort for consumptive invalids in the British Islands, containing many facts of much value, both for the physician and the patient.*]

3. The Constitution of Women, as Illustrated by Abdominal Cellulitis or Inflammation of the Cellular Membrane of the Abdomen and Pelvis. By Charles Bell, M. D., &c. Edinburgh: Sutherland and Knox. Reprint. Pamphlet, pp. 44.

[*A very complete resumé of the present state of our knowledge regarding an obscure disease of the adult female. The author illustrates his views of treatment by the detail of some cases.*]

4. The Iniquity and Impolicy of confining Drunkards as Lunatics. A more Equitable and Effective Remedy Suggested, &c., &c. By John Leech, M. D., &c. Glasgow: Robertson, 1855. Pamphlet, pp. 66.

[*As at present, at least in Ireland, we have no intention of confining drunkards in lunatic asylums, we do not think it necessary to notice this pamphlet.*]

5. Revista de Pharmacia e Sciencias Accessorias do Porto. Oporto, Pereira, 1857. No. 1 and 2.

6. On a True Parthogenesis in Moths and Bees. A Contribution to the History of Reproduction in Animals. By C. T. E. von Siebold. Translated by W. Dallas, F. L. S. London: Van Voorst, 1857. pp. 110.

7. Epidemic Cholera, Diarrhœa, and Dysentery. Pointing out an Effectual and Expeditious Method of Cure. With Cases submitted to the Medical Council of the Board of Health during the Epidemic of 1854. By H. Jeanneret, M. D., &c. London: Philip and Son, 1857. Pamphlet, pp. 34.

[*In this pamphlet the author complains bitterly that the profession will not at once adopt his opinion, that epidemic cholera is a disease most amenable to treatment by full doses of camphor. He states that he first used it successfully in his own person and in the immediate members of his family.*]

8. On the Secondary Eruption following Vaccination. By George Ross, M. R. C. S. Read before the Medical Society of London, February 7, 1857. Reprint.

[*A useful and impartially written contribution to an obscure question connected with vaccination.*]

9. Practical Observations on the Use and Abuse of Tobacco, &c. Accompanied with Cases illustrated by Coloured Plates. Sixth Edition. By John Lizars, Late Professor of Surgery to the Royal College of Surgeons, &c. Edinburgh: W. H. Lizars, 1857. 8vo. pp. 42.

[*On a previous occasion we have favourably noticed this "counterblaste" by Mr. Lizars; but we cannot altogether subscribe to his indiscriminate condemnation of the weed, which personally we loathe, perhaps, as much as the author.*]

10. Recherches sur les Maladies de l'Armée d'Orient pendant l'Hiver de 1854 a 1855. Par M. le Dr. Tholozan. (Reprint.) Pamphlet, pp. 17.

[*A short, but practical summary of the diseases which affected the French army in the recent Eastern Campaign, deduced from observations made by the author in the principal Military Hospital at Constantinople, during four months' charge of it.*]

11. A Dictionary of Practical Medicine, &c., &c. By James Copland, M. D., F. R. S., &c. London: Longmans, 1857. Part XVIII., pp. 1153 to 1296.

12. On the Pathology, Symptoms, and Treatment of Ulcer of the Stomach. With an Appendix of Cases. By W. Brinton, M. D., &c. London: Churchill, 1857. 12mo. pp. 227.

13. Compressed Air as a Therapeutic Agent in the Treatment of Consumption, Asthma, Chronic Bronchitis, and other Diseases. By A. Simpson, M. A., M. D. With a Preface by W. Macleod, M. D., &c. Edinburgh: Sutherland and Knox, 1857. 8vo. pp. 40.

[*The proprietor of a large hydropathic establishment at Ben Rhydding, in Yorkshire, finding, we suppose, cold water insufficient to attract as many patients as he wishes for, has pressed "compressed air" into his service, and in this pamphlet makes his assistant describe its marvellous curative properties, acting the part of Chorus himself in a preface.*]

14. The Anatomical Remembrancer, or Complete Pocket Anatomist, &c., &c. Fifth Edition. London: Churchill, 1857. 16mo. pp. 248.

[*A poor little production, which could have only reached so many editions by the patronage of idle students.*]

15. Of Nature and Art in the Cure of Disease. By Sir John Forbes, M. D., &c. London: Churchill, 1857. 12mo. pp. 264.

[*We regret much that Sir John Forbes should have been induced, in his old age, to promulgate such doctrines as are here put forth. The propounding of somewhat similar views, when he was a much younger man, destroyed the Medical Journal which he had founded, and this ought surely to have been lesson enough to him as to the opinion entertained of them by the profession.*]

16. The Transactions of the American Medical Association, instituted 1847. Vol. IX. Philadelphia: J. K. and O. G. Collins, 1856. 8vo. pp. 907.

[*In our next.*]

17. Cranial Presentations and Cranial Positions; Suggestions, Practical and Critical. By R. W. West, M. D. Glasgow: Mackenzie. Reprint, pp. 60.

18. Clinical Lectures on Certain Diseases of the Urinary Organs, and on Dropsies. By R. B. Todd, M. D., &c. London: Churchill, 1857. Fcap. 8vo. pp. 435.

19. On Diseases of the Skin. By Erasmus Wilson, F. R. S. Fourth Edition. London: Churchill, 1857. 8vo. pp. 747.

[*This is a much enlarged and improved edition of Mr. Wilson's book, the value of which is best shown by its success in reaching a fourth edition after a few years.*]

20. A Report upon some of the most Important Points connected with the Treatment of Syphilis. By Holmes Coote, F. R. C. S. London: Churchill, 1857. 8vo. pp. 141.

21. The Constitution of the Animal Creation, as expressed in Structural Appendages. By G. Calvert Holland, M. D., &c. London: Churchill, 1857. 8vo. pp. 310.

[*An imposing-looking volume of the veriest rodomontade, on the uses of hair upon the surface of the body.*]

22. The History, Diagnosis, and Treatment of the Fevers of the United States. By E. Bartlett, M. D., &c. Fourth Edition. Revised by A. Clark, M. D., &c. Philadelphia: Blanchard and Lea, 1856. 8vo. pp. 610.

[*This is a much improved edition of Dr. Bartlett's work on Fevers, which has now become a classical volume in America. The objectionable passages, which we pointed out in a review of the first edition, in our fifth volume, have been omitted.*]

23. On the Protective and Modifying Powers of Vaccination. By E. C Seaton, M. D., &c. London: Richards, 1857. Reprint. Pamphlet, pp. 26.

[*A timely and well-written pamphlet on this important subject, disproving many of the professional and popular errors which interfere with the universal adoption of vaccination.*]

24. Address to the Medico-Chirurgical Society of Edinburgh. Delivered on the Occasion of taking the Chair of the Society. By J. Miller, F. R. S E., &c. Edinburgh: Printed for the Society, 1857. Pamphlet, pp. 16.

[*Like all the author's writings, eloquently and classically composed.*]

25. Nineteenth Annual Report of the Suffolk Lunatic Asylum, December, 1856. Pamphlet, pp. 26.

26. Cases and Observations illustrative of the Beneficial Results which may be obtained by close attention and perseverance in some of the most unpromising Instances of Spinal Deformity, without the Use of Steel Stays, or other similar Contrivances. By S. Hare, F. R. C. S., &c. London: Churchill, 1857. 8vo. pp. 88.

27. Is Ovariotomy justifiable or not? By J. M. Duncan, M. D., &c. Edinburgh: Reprint, 1857. Pamphlet, pp. 11.

[*In this pamphlet Dr. Duncan, with much ability, denounces this operation as a curative measure.*]

28. Précis Iconographique de Bandages, Pansements et Appareils. Par M. le Dr. Goffres. Part 6. Paris: Méquignon-Marvis.

29. Rapport a la Société de Chirurgie sur l'Elephantiasis du Scrotum. Par M. H. B. Larrey, Chirurgien Ordinaire de l'Empereur. Paris: Victor Masson, 1856. 4to, pp. 172.

[*In our next.*]

30. Bulletin de la Société Médicale des Hopitaux de Paris. 3^{me} Série. No. 4. 1856.

31. Des Anéurysmes et de leur Traitement. Par Paul Broca. Paris: Labé, 1856. 8vo. pp. 931.

[*In our next.*]

32. On Diseases of the Bladder and Prostate Gland. By William Coulson, Surgeon to St. Mary's Hospital, &c. Fifth Edition, Revised and Enlarged. London: Churchill, 1857. 8vo. pp. 640.

[*We have, on previous occasions, so fully and so favourably reviewed the former editions of this book, that nought is left for us now to say, except to announce that it is in every way improved and much enlarged.*]

33. The Hygienic Treatment of Pulmonary Consumption. By B. W. Richardson, M. D., &c. London: Churchill, 1857. 8vo. pp. 115.

[*In our next.*]

34. The Functions and Disorders of the Reproductive Organs in Youth, in Adult Age, and in Advanced Life. Considered in their Physiological, Social, and Psychological Relations. By William Acton, Late Surgeon to the Islington Dispensary, &c. London: Churchill, 1857. 8vo. pp. 108.

35. The British Journal of Homœopathy. London: Groombridge and Sons. No. LX., April, 1857.

36. Traité de l'Angine Glanduleuse et Observations sur l'Action des Eaux-Bonnes dans cette Affection; précédés de Considérations sur les Diathèses. Par Noël Gueneau de Mussy, Médecin de l'Hopital de la Pitié, &c. Paris: Masson, 1857. 8vo. pp. 269.

37. The Ophthalmia of Ireland: its Nature, Effects, and Treatment. By John Williams, A. B., Licentiate of the King and Queen's College of Physicians, &c. Dublin: Fannin and Co., 1857. 8vo. pp. 44.

[*In our next.*]

38. On the Diseases of Women: including those of Pregnancy and Childbed. By Fleetwood Churchill, M. D., Professor of Midwifery in the King and Queen's College of Physicians, &c. Fourth Edition. Dublin: Fannin and Co., 1857. Fcap. 8vo. pp. 827.

39. Medical Statistics of the Dublin Metropolitan Police, with Report of the Medical Officers for the year 1856. Folio, pp. 8.

[*The usual Annual Report, carefully compiled by the Medical Officers, Dr. Ireland and Sir A. Clarke, forming a useful contribution to medical statistics.*]

40. Phantasmata, or Illusions and Fanaticisms of Protean Forms, Productive of Great Evils. By R. R. Madden, F. R. C. S., M. R. I. A., &c. London: Newby, 1857. 2 vols. 8vo. pp. 504 and 588.

[*In our next.*]

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill. (Received regularly.)

2. The Edinburgh Medical Journal. Published Monthly. Edinburgh: Sutherland and Knox. (Received regularly.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received regularly.)

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Published Monthly. London: Taylor and Francis. (Received regularly.)

7. The Lancet. A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News. Edited by Thomas Wakley, Surgeon. Published Weekly. London. (Received regularly.)

8. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

9. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)

10. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)

11. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)

12. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)

13. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)

14. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

15. The Dublin Medical Press. Published Weekly. (Received regularly.)

16. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

17. The Natural History Review: including the Transactions of the Irish Natural History Societies, and of the Geological Society of Dublin. Published Quarterly. Dublin: Hodges, Smith and Co. (Received regularly.)

INDIA.

18. The Indian Annals of Medical Science; or, Half-Yearly Journal of Practical Medicine and Surgery. Calcutta: Lepage and Co. (No. VII. received.)

19. Transactions of the Medical and Physical Society of Bombay. Printed at the Bombay Education Society's Press. (Received No. 2, New Series, for the Years 1853 and 1854.)

AUSTRALIA.

20. The Australian Medical Journal. Melbourne: Buzzard. Published Quarterly. (Received Nos. 1, 3, and 4.)

AMERICA.

21. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Blanchard and Lea. (Received regularly.)

22. The North American Medico-Chirurgical Review. A Bi-monthly Journal. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. Philadelphia: Lippincott and Co. (Received No. 1.)

23. The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. Purple, M. D., and S. Smith, M. D. Published Monthly. New York. (No. 1, of Vol. I., not received.)

24. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bimonthly. New Haven. (Received regularly.)

25. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (No. 1, Vol. XIII., not received.)

26. The American Journal of Dental Science. Edited by C. A. Harris, M. D., and A. S. Piggot, M. D. Published Quarterly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

27. The Charleston Medical Journal. Published Monthly. Charleston, U. S. (Received regularly.)

FRANCE.

28. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

29. Gazette Hebdomadaire de Médecine et de Chirurgie. Published Weekly. Paris: Victor Masson. (Received regularly.)

30. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Published Monthly. Paris: Labé. (Received regularly.)

31. Journal de Pharmacie et de Chimie, &c. Published Monthly. Paris: Victor Masson. (Received regularly).

32. L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionels du Corps médical. Published three times a Week. Paris. (Received regularly.)

33. La Lancette Française, Gazette des Hôpitaux civils et militaires. Published three times a Week. Paris. (Received regularly.)

34. Le Moniteur des Hôpitaux, Revue Médico-Chirurgicale de Paris. Redacteur en chef: M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

35. Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique. Published twice a Month. Publié par le Docteur Sales-Girons. Paris. (Received regularly.)

36. Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales. Published Monthly. Paris: Labé. (Received regularly.)

37. Bulletin de l'Académie de Médecine. Published Monthly. Paris: Baillière. (Received Vol. XXI.)

38. Mémoires de l'Académie de Médecine. (Received regularly.)

39. Revue de Thérapeutique Médico-Chirurgicale. Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

40. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecins. Published Monthly. Par Lucas-Championnière. Paris. (Received regularly.)

41. Journal des Connaissances Médicales pratiques et de Pharmacologie. Published every ten days. Paris. (Received regularly.)

42. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Published Quarterly. Paris: Victor Masson. (Received regularly.)

43. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil pratique. Par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

44. Repertoire de Pharmacie. Recueil pratique. Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

45. Gazette Médicale de Strasbourgh. Published Monthly. (Received regularly.)

46. Revue Thérapeutique du Midi, &c. Par le Dr. Louis Saurel. Published twice a Month. Montpellier. (Received regularly.)

47. Journal de Médecine de Bordeaux. Redacteur en chef, M. Costes Published Monthly. (Received regularly.)

48. L'Union Médicale Gironde. Bordeaux. Published Monthly. (Received regularly.)

BELGIUM.

49. Annales D'Oculistique. Fondées par le Docteur Florent Cunier. Published Monthly. Brussels. (Received regularly.)

50. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

GERMANY.

51. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Published Monthly. Heidelberg and Leipzig: C. F Winter. (Received regularly.)

52. Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien. Redacteur: Professor, Dr. Ferdinand Hebra. Vienna: Gerold. (No. 12, for 1853, Nos. 3, 4, 6, 9, 10, 11, for 1854, and No. 1 for 1856, not received.)

53. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Prague: Karl. André. (Received regularly.)

54. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received regularly.)

55. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm and Enke. (Parts 3 and 4, 1854, 1 and 2, 1855, and 2, 1856, not received.)

56. Wochenblatt der Zeitschrift der Kaiserl. Königl. Gesellschaft der Aerzte zu Wien. Published Weekly. Vienna: Gerold. (Received regularly.)

57. Aerztliches Intelligenz-Blatt. Organ für Bayerns Staatliche und öffentliche Heilkunde. Munich: C. Kaiser. (Received regularly.)

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58. Archiv für pathologische Anatomie und Physiologie, &c., Herausgegeben von R. Virchow. Berlin: G. Reimer. Published Monthly. (Received regularly.)

HOLLAND.

59. Nederlandsch Lancet. Gravenhage: Noordendorpe. (Received regularly.)

NORWAY.

60. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund. Voss. Published Monthly. Christiania: Feilberg & Landmark. (Received regularly.)

SWEDEN.

61. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm. (Received regularly.)

DENMARK.

62. Bibliothek for Læger. Udgivet af Direktionen for det Classenske Literaturselskab. Redigeret af Dr. E. Dahlerup. Copenhagen: Reitzels. (Received Vol. IX., No. 1.)

ITALY.

63. Gazzetta Medica Italiana Federativa Toscana. Florence. Published Weekly. (Received regularly.)

64. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (No. 2 for 1855, and Nos. 5, 6, 7, 11, and 12, for 1856, not received.)

65. Giornale Veneto di Scienze Mediche. Published Monthly. (Received regularly.)

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THE DUBLIN QUARTERLY JOURNAL OF MEDICAL SCIENCE.

FEBRUARY 1, 1857.

PART I.

ORIGINAL COMMUNICATIONS.

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ART. I.—*Second Memoir on Excision of the Knee-Joint; to which is appended a remarkable Example of the Powers of Operative Surgery in saving the same Articulation*[a]. By RICHARD G. H. BUTCHER, Esq., M. R. I. A., F. R. C. S. I., Examiner in Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery, &c., &c.

IN February, 1855, I published[b] my first memoir on Excision of the Knee-Joint, and it was favourably received by the profession in all countries. On the Continent it has been noticed: in France it has been referred to, almost reprinted, by M. Costes at Bordeaux, and reproduced by Malgaigne in the "Revue Médico-Chirurgicale de Paris;" while in England it has been appealed to and quoted by many able surgeons: and why this flattering reception? Because therein recorded was the living testimony of powerful advocates, the unbiassed sentiments of thinking men brought to bear on a great, a difficult, a disputed problem; all their energies concentrated, with no other object than the advancement of science, and the benefit of man. In the paper referred to, the operation was traced from its first performance by Park, in July, 1781, to its "abandonment after Syme's failure in 1830;" and again, from its introduction and revival by Fergusson, in 1850, up to October, 1854. Tabular statistics were given of all the cases operated on within these two epochs, answering every particular:—the surgeon who operated; the hospital in which the patient was lodged; the sex and age of the person; the date of the operation; the result as to life; and the condition of the limb at the time that the report closed. Of the six cases mentioned at the end of the "Table within the second epoch," and reported at the time as recovering, one was subjected to amputation, and recovered; and the remaining five were restored, with perfect use of the limb in every instance.

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[a] A short abstract of this Paper was read before the Surgical Society of Ireland, December 13, 1856.

[b] Dublin Quarterly Journal of Medical Science.

I shall dwell upon these cases for a few minutes, and bring up their report to the present time. In the important question under consideration, it is most essential to prove all that may have been advanced, so that not even a semblance of doubt should rest upon that which I have written. The first of the six cases to which I have adverted as "recovering rapidly," at the time the report had been made (placed at the end of the second Table), was under the care of Mr. Jones, of Jersey, and, after contending with great difficulties and serious complication, in the form of an immense abscess in the lumbar region and sinuses, he had his patient so far benefited as to perceive she was "improving rapidly in health, and to flatter himself she would recover, and have a useful limb." Now, in an admirable paper on Excision of the Knee-Joint, by Mr. Henry Smith, of London, published in the Medical Times and Gazette[a], he alludes to this case, and as having seen it in October, the month before Mr. Jones wrote to me; and he there says:—"I myself saw this girl (in October); the operation had been done some months; the limb was in good position, and, although there was a great discharge from the wound, and the patient had suffered materially from the existence of a large abscess in the back, the result of a fall a month before the operation, which she had kept secret, she seemed to be doing well." Mr. Smith continues:—"Mr. Jones, however, lately wrote to me, 'You know the state you left her in, and I had every hope the excised limb would prove a useful one, but acute necrosis came on, and was evidently fast gaining ground along the shaft of the femur, so I immediately determined to amputate the limb as high as I could. The girl has now left the hospital with an admirable stump: on examination there was strong ligamentous union at the knee.' "

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[a] Vol. x. p. 519.

I have been informed, relative to the second of these cases—a child operated on by Mr. Fergusson—that he is able to run about, with but little halt, and is in excellent health.

The third of the six cases was a little boy, aged 8, operated on by Mr. Holt, of Westminster Hospital, and marked by me as rapidly recovering. The report, at the time referred to, October 31, 1854, was in a private letter, and to this effect:—"At the expiration of six weeks the bones were anchylosed, and I have no doubt his case will be perfectly successful." How truly we find this prediction verified by the report given of the case in the Lancet, September 13, 1856, wherein it is stated:—"He now walks and runs without the slightest difficulty;" and I have received from Mr. Holt, on October 1, 1856, the following reply in answer to my inquiry:—"The little boy to whom you refer has continued to walk and run without difficulty since I last wrote to you; he is fat, and in excellent health."

The fourth case—that operated on by Mr. Statham—has been very tedious, and slow in recovery. I frequently solicited information relative to it, but to no purpose. However, I have been referred by Mr. Smith to the last account of it in a public record, a small work—Gunshot Fractures and Resections—wherein it is stated, p. 117:—"March 14, 1856: Is found lying in bed, but gets up six hours a day, and gets about with the aid of a chair; joint is quite healed, not tender, but stiff; no matter escapes, and there is no pain."

The fifth case was under the care of Mr. Henry Smith—a boy aged six years—and operated on October 18, 1854, and tabulated as "rapidly recovering." Mr. Smith gives the full details of this case in an able paper[a], already referred to, and from which I make the following extract:—

"April 15th. For the last month the patient has been walking about the streets every day, after having been furnished with a boot having a sole two inches higher than the other; and by means of a crutch and stick his powers of progression are very free. He plants the limb, which is very firm, well down upon the ground; and, with the assistance of a stick alone, he can walk with the utmost facility; but when he goes out for any distance, I have desired that he should use a crutch as well, as a mere precautionary measure, especially as the boy, being proud of his leg, is very fond of showing his agility, by the performance of the most eccentric movements, which are more calculated to amuse others than to enhance the utility of his limb. On very careful admeasurement of the two limbs, I find that the limb operated on is two inches and one quarter shorter than the other. It is straight, and not bowed out. On using some force above and below the site of operation, a little amount of movement, before backwards, can be produced; but in the lateral direction this is hardly detectible. In all probability the junction between the bones is partly fibrous, partly osseous. Whatever be its nature, the limb is a remarkably useful one to the boy."

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[a] Medical Times and Gazette, May 26, 1855.

Having written to Mr. Smith as to the condition of this boy at present, he politely answered my inquiry on the 1st of October, 1856:—"You ask for information as to the case operated on by me two years since. I have seen the boy this morning; he walked to my house from a considerable distance, without a stick; he can walk and run about very well; takes a great deal of active exercise, and walks long distances, without the assistance of a stick even; of course, he has a high-heeled shoe, which is one inch and a half thicker than the other at the toe, and a little less than two inches at the heel. The limb is very well developed; and, what is most satisfactory, is, that the union between the bones, at the knee, is almost quite firm; whereas, for many months after the cure was complete, and the boy was enabled to use the limb well, there was considerable mobility at the part operated on. You will, I am sure, agree with me, that this consolidation of the bones, gradually becoming more decided, as time elapses, is an important and encouraging feature, and one worthy of notice—for those who oppose this operation have made, as one of their most prominent objections, the tardy and deficient union which undoubtedly occurs in some cases, when the powers of the system are at a low ebb."

The last of the six cases noticed in my former Table is that operated on by Mr. Erichsen. When it was reported that the patient "was rapidly recovering, there was a good anchylosis, and the parts nearly quite firm." Shortly after this time he was dismissed from the hospital, with perfect use of the limb; and, in answer to my inquiry a few days since, I received from Mr. Erichsen the following reply, dated October 5, 1856:—"I have not seen the case to which you refer for a considerable time, nor do I know exactly where to find the child; but I should suppose that he is going on well, or I should most certainly have seen him again."

The case upon which I operated in January, 1854, was eminently successful; the man has continued up to the present time in admirable health. On the 8th of December, 1854, I described his condition as follows:—“ He stands erect, without the slightest droop. From being an emaciated, worn creature, he has become large and fat, with the entire muscular system well developed; the sickly hue and haggard expression have left his face; and he now looks cheerful and happy. He feels in admirable health. On closely examining the limbs, the affected one has nearly recovered its dimensions and muscular tone; the thigh perfectly so; it preserves an accurate axis with the trunk, but is slightly shorter than the sound limb. The adapted surfaces of the tibia and femur are bound together by a rigid permanent union; grown into each other, they are immovable and fixed. The motions of the limb effected by the muscles of the hip are very perfect. When in the horizontal posture, the patient can elevate, depress, rotate inwards or outwards, the limb with the greatest precision and accuracy; he possesses a like power in executing those movements either rapidly or slowly. Unsupported, he can sustain the entire weight of his body upon the limb, unassisted by stick or cane. He can walk steadily, with scarcely any perceptible halt, the limb being one solid piece. The amount of shortening is not very conspicuous, being two inches; it is not much greater than is absolutely necessary for the perfection of progression, under the circumstances. A layer of cork beneath the heel, inside of his shoe, fully compensates for the loss, and conceals all deformity. The motions of the ankle-joint are perfectly preserved. It is true that, upon first making the attempt to walk, even for a short distance, he complained of uneasiness, and feeling tired; first in this joint, but never referred pain to the knee. This enfeebled condition of the ankle may be fairly ascribed to the maintenance of the limb in a constrained and straight position for such a length of time; it has been, however, only a temporary uneasiness, which gradual exercise and time have removed. The patient can now walk without any support; he plants the limb firmly upon the ground, without being sensible of the slightest concussion, and feels confident and satisfied in its strength. On the day before yesterday he walked to the Park, and about the grounds, a distance of over four miles, assisted by a walking-stick; and he assured me he was not in the least degree fatigued, or the worse for it. Though the bones are grown into each other, yet I never permit the man to go out without an artificial support to the joint: a short splint placed behind, and steadied with a few turns of a roller, answers every purpose. It should be borne in mind, that only eleven months have elapsed since the operation; and I consider half that number more, at least, necessary to pass over, before immunity from bowing of the limb can be secured. Ever since the man left the hospital, now nearly three months ago, he has followed his trade as a shoemaker, and in this business the limb is of great service, for it is necessary to grasp the shoe between the thighs, at their lower part, so as to steady it for stitching; this he is perfectly enabled to accomplish by supporting the limb upon a form. Had the thigh been amputated, he says he could not have worked at his employment. Preserved in this jar are the portions of bone taken away: the condyles of the femur, the articulating surface of the tibia, and the patella. The entire amount of bone, when placed in apposition, measures two inches. This drawing represents the parts, and is faithful as to size; and this picture of the man, drawn by Connolly, was taken when the report which you have just heard read was drawn up."

Two years have just passed by, and I am happy to say that the limb has stood the best test of all, that of trial, hardship and fatigue. I brought the young man to the meeting of the Surgical Society at which I read a short abstract of this paper, and presented him before a large assembly of the profession and of students. His appearance, his movements, the symmetry and condition of his limb, in the strictest sense, far surpassed the description which I have read:—1. As to his appearance, he absolutely looks younger than when the drawing was made; this may be ascribed fairly to all anxiety and apprehension being removed, and his improved worldly circumstances, derived from an active, industrious prosecution of his trade; 2. As to his movements, there is nothing straitened about them, and some of them are even graceful in various attitudes; no awkwardness perceptible; 3. As to the symmetry and condition of his limb, the thigh is larger, the muscles of the calf are more developed, and its correct axis maintains; he stepped from the chair upon which he was standing firmly on the ground, alighting on the limb operated upon, a sufficient guarantee for its solidity and strength. Finally, the man himself says, that he can walk any distance, twelve, fifteen miles, or more, at a time, and without fatigue, and by its instrumentality he can work at his trade and earn a comfortable maintenance, and that without interruption.

It is a pleasing thing to dwell upon facts like these, but I must go on. The construction of this, my second memoir, on Excision of the Knee-Joint, will be strictly in accordance with the first: I shall briefly detail each case operated on since the former report closed, and I shall likewise introduce a few cases that occurred prior to that period, and which then had not come to my knowledge. For many of those cases which I shall recite I am indebted to the pages of the Lancet, Medical Times and Gazette, and Association Medical Journal; but for many more, which have not yet appeared in print, I am deeply indebted to the kindness of the operating surgeons in England and Scotland, who have most courteously answered all my inquiries. From this source likewise I have derived, probably, the most valuable information of all, without compromise, namely, the condition of the several patients up to the present time, December, 1856.

CASE I.—Professor Pirrie, Surgeon to the Royal Infirmary, Aberdeen, excised the knee-joint of a little boy, aged ten years, May 17, 1854, for incurable disease. In this instance the portions of bone removed measured one inch and three-quarters. Measles were very prevalent at the time, and the child was attacked. Hectic fever intervened, and amputation was performed, at the upper part of the lower third of the thigh, on the 10th of June. The boy was dismissed cured on the 18th of August, 1854.

CASE II.—Mr. Peter Brotherston, of Alloa, excised the knee-joint of a boy, aged ten years, on the 19th of May, 1854, for disease of the part. The boy being put under the influence of chloroform, a free incision was made across the front of the knee-joint, below the patella; the lateral and crucial ligaments were divided; and the connexions round the condyles of the femur being separated, about three-quarters of an inch of the condyles were sawn off; a slice of about one-third of an inch in thickness was then taken from the head of the tibia, and the cartilage was removed from the inner surface of the patella by means of a gouge; the ends of the bones were secured, and the wound closed with sutures; a splint covered with lint was applied to the knee; and the whole secured with a bandage. In seven months complete anchylosis of the bones had taken place, and the boy could walk with freedom[a].

CASE III.—Mr. Fergusson excised the knee-joint of a boy, aged ten years, August 19, 1854. The child had extensive disease of the joint, incurable, protracted, and enfeebling all the powers of life. Mr. Henry Smith, in an interesting letter to me, states the great feature in the case was a very anemic and bloodless condition of the body, which led one to predict unfavourably of any severe operation. The child died on the fifth day.

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[a] Edinburgh Medical Journal, April, 1856.

CASE IV.—Mr. Landsdown excised the left knee-joint of a girl, aged 12, in the Bristol Infirmary, September 26, 1854. The particulars of this case I find thus reported by Mr. H. Smith, of London, in a paper published in the Medical Times and Gazette (May 26, 1855), and which I have adverted to in another place as being most valuable and instructive. In reference to the case this able surgeon writes:—"One case was under the care of Mr. Landsdown, at the British Infirmary. The patient was an irritable and highly nervous girl." He continues:—"Mr. Landsdown wrote to me some time ago to say, that since the operation there have been no untoward constitutional symptoms; but from the day of the operation she would turn on the left (the operated side), thus throwing the femur out, the leg being straight and resting upon the back part. At first it made but little perceptible difference. All attempts to change the position of the body brought on tears, and consequently excitement. The femur was very soon pushed through the wound to the outer side, the tibia going up straight, and, instead of remaining on a line with the femur, has gone up inside and behind it, and has thus shortened the limb, I think, at least six inches. What the ultimate result will be, I cannot tell, but I fear amputation." Mr. Smith writes:—"I am happy to say, since this was written, Mr. Landsdown has kindly informed me that the protruded bone has exfoliated; that the patient was in improved health, and that she was gaining strength in the limb, so that it is hoped she will ultimately do well." Mr. Smith, to whom I am indebted likewise for the following information, transfers Mr. Landsdown's report, dated December 3, 1856:—"About four months since, having been able to walk with one crutch, she fell; the consequence was, two ulcers formed upon the knee, which have now healed up. She now walks about the house without any assistance, but out of doors she uses one crutch. The limb has become quite straight, and she is well satisfied with it as it is; it certainly is not strong, but I expect will be a very good leg."

CASE V.—Mr. Humphrey, Surgeon to Addenbrooke's Hospital, Cambridge, excised the left knee-joint from a woman, aged 20, on the 27th October, 1854. Mr. Humphrey made a transverse incision over the patella, more than half round the joint, and short cuts upwards and downwards, at right angles to it, at either end; reflected the flaps thus made, and cut into the knee-joint, dividing the lateral ligaments. The patella had acquired close connexions with the outer condyle; and in the endeavour to separate it, and press it on the outside of the joint, with a view of saving it, the ligamentum patellæ was torn up from the head of the tibia, and then the bone was removed; the joint was then bent, the adhesions between the bones, which were of fibrous nature, and the crucial ligaments, being, at the same time, divided with the scalpel. The ends of the bones being sufficiently uncovered, three-quarters of an inch were sawn off from the condyles of the femur, and a thinner slice from the tibia. On placing the cut surfaces of the bones together, the leg was found to incline a little outwards; this was rectified by sawing off another thin, oblique slice from the inner part of the cut surfaces of the bones. The limb was bandaged, and placed in a straight splint, with a pad under the head of the tibia to raise it, and proper apposition was secured by the pressure of broad lateral splints. No unfavourable symptom followed; not the slightest fever, and scarcely any inflammation at the knee. The discharge forced its way through the bandages, which were seldom disturbed, not more than once in a fortnight or three weeks. In January, the wound being healed, all but one small orifice, and the union of the bones being tolerably firm, the limb was encased in a gum-chalk bandage, and the patient went home. In September she returned, the part having been painful and inflamed; there was a sinus extending three or four inches up the forepart of the thigh; on this being laid open, the bone was not discovered diseased or exposed. The wound healed up, and she again went home; there was pretty firm osseous union between the bones, and every probability of her being able to walk upon the limb[a].

CASE VI.—Professor Pirrie, Surgeon to the Royal Infirmary, Aberdeen, excised the knee-joint from a boy, aged 14, for incurable disease, on November 4, 1854, removing altogether about two inches of bone. There were many bad cases of erysipelas at the time, and the patient was attacked; it commenced in the under part of the leg; purulent collections formed beneath the skin and between the muscles; gangrenous masses of areolar tissue were discharged along with the matter, and sero-purulent infiltration took place into the whole of the areolar tissue of the leg. Amputation was performed at the upper part of the lower third of the thigh, November 13, 1854, and the patient made an admirable recovery, being dismissed cured, December 19, 1854.

CASE VII.—Mr. Hughes, Surgeon to the Staffordshire General Infirmary, excised the knee-joint of a young woman, aged 27, November 16, 1854, for incurable disease. The H-shaped incision was adopted; the patella was so diseased as to require removal. Mr. Hughes then proceeded to clear the articulating extremities of the femur and tibia from the condensed and hardened tissues. He then sawed through the extremities of the bones in each, making the line of section to slope slightly from the joint, so that the shape of the whole mass of bone removed was that of a truncated pyramid, of which the apex was at the anterior surface of the joint; by this means, when the sawn extremities were placed in apposition, the femur and tibia formed a very obtuse angle, and, according to Mr. Hughes' views, rendered the limb much more useful in progression. In the course of the operation it was discovered that a long, burrowing abscess, opening into the joint, was situated immediately behind the femur, extending up the thigh. The flaps having been brought together by sutures, the whole limb was placed on a splint made for the purpose, with the knee very slightly flexed. After the operation, the patient suffered alarmingly from the shock, but Mr. Hughes' opinion was, that if the chloroform had been continued until the patient was placed in bed, and the limb finally arranged, this state might have been avoided. Electro-magnetism was had recourse to, and apparently with the best effect. In February, the abscess which was found at the operation to extend up the thigh, close to the femur, re-opened about a hand's-breadth above the joint, discharged freely, and then healed. In October, 1855, her condition is thus described:—" She was in robust health, plump and active, walked to visit her neighbours, and could ascend stairs without aid, wearing a thick, solid boot on the short limb. The appearance of the limb in the situation of the joint is not unsightly[a]."

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[a] Association Medical Journal, February, 1856.

CASE VIII.—Mr. Fergusson resected the knee-joint of a boy, aged four years, December 16, 1854,—a wretched, strumous child, with a very diseased joint,—yet the health was pretty good. On excising the parts, it was found that the chief mischief lay in the head of the tibia, which was much diseased, and it was necessary to scoop away a considerable portion of morbid structure; an inch and a half of bone were removed. Matters, however, went on well notwithstanding, and the wound nearly healed, but nothing like union took place until he was removed to the sea-side, when he rapidly improved, and came back with a very fair leg.

CASE IX.—Mr. Brotherston, of Alloa Hospital, excised the knee-joint of a boy, aged eleven years, January 12, 1855. In this case there was an urgent necessity for excision or amputation being immediately performed. The extreme paroxysms of pain which came on whenever the boy attempted to sleep, caused by the ulceration of the cartilage, and his state of nervous debility, showed that he could not have borne up longer under the source of irritation. There was a sinuous opening in the ham, which discharged a quantity of matter. The operation was performed on the above date. There was a considerable quantity of pus in the joint, and distinct ulceration of the cartilage on the condyles of the femur and head of the tibia. The incision nearly all healed by the first intention, and everything went on well till about the beginning of March, when an abscess began to form on the outside of the thigh, a little above the seat of the operation. This was opened on the 28th of March, and afterwards the abscess gradually closed, and finally closed altogether. The limb after some months became firmly anchylosed[a].

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[a] Medical Times and Gazette, March 15, 1856.

CASE X.—The following is a very important case, replete with interest, and communicated to me by that most admirable surgeon, Dr. Keith, of Aberdeen. I shall give his own graphic description:—"John Thompson, aged 33, seaman, long affected with abscesses in the thigh, communicating with the knee-joint, admitted to the hospital, 13th of February, 1855. Excision of the knee-joint was accomplished on the 10th of March most satisfactorily; for a time all went on well, but recurring abscesses down the leg, and up the thigh, with persistent diarrhœa and extreme curvature of the limb, from retraction of the muscles of the inner hamstring, induced me, after a bold struggle, extending over 224 days, on the 20th of October to amputate at the middle of the thigh. He made most rapid recovery after, and was dismissed, in robust health, on the 30th day of November, 1855. He continues well, and is now (11th March, 1856, the time when I received the report) being fitted with an artificial limb. So this is one failure in my hands out of three, but the patient lives, and is in health, and had a chance for his own limb."

CASE XI.—Mr. Tatum excised the knee-joint of a young man, aged 18, in St. George's Hospital, May 1, 1855. The patient had been under treatment for some time, on account of strumous disease of the knee-joint, which had existed for some years; he had been treated by various modes; the pain, however, remained, and an abscess formed, which was opened on the 13th of the previous February. Matters not improving, on the above date, it was decided, as there seemed only a small part of the bones involved, to excise their articular extremities, which was done by an H-shaped incision. The patella was thrown up in the upper flap, and was not removed; about half an inch in thickness of the ends of the femur and tibia was sawn off (rather more of the tibia); the joint was found disorganized by suppuration in its cavity, but the bones were only secondarily affected, and were partly healthy when cut through. The synovial membrane investing the parts removed was found much thickened, the bones partially denuded of their cartilages, and unnaturally vascular (especially the tibia), but otherwise healthy. The leg was put upon a ham splint. On the 15th he was much exhausted by the profuse discharge: the face pale, and eyes sunken; some union had been going on in the wound, so that its transverse part was closed; the rest gaped widely; he had rigor, and complained of pain in the right ankle, which was tender on pressure; and he had slight cough. The same symptoms persisted up to the 18th, with the addition of rusty-coloured expectoration; and he died this day.

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[a] Edinburgh Medical Journal.

At the autopsy the patella was found perforated by a rather large ulcerated opening, and there was an abscess between it and the anterior surface of the femur. The cut end of the femur was coated with a grayish layer of lymph, and its cancellous texture, as far as the line marking the junction with the epiphysis, was filled with a similar deposit; the shaft was perfectly healthy; the cut end of the tibia was excavated by caries, and its shaft, for three or four inches, was extremely carious and infiltrated with pus; the popliteal vein was filled with clotted blood and pus, and its lining membrane inflamed and coated with lymph. The femoral and iliac veins also contained pus; the lungs were extremely infiltrated with purulent deposits, otherwise, all the viscera were natural[a].

Case XII.—Mr. Humphrey, of Addenbrooke's Hospital, Cambridge, excised the knee-joint of a sailor, aged 47, May 4, 1855. The history of the case is as follows:—He broke his right patella transversely by a fall upon the deck six months before, the knee coming in contact with an iron ring; the fragments of the patella were four inches apart; there appeared to be no connecting medium at all, the articular surface of the femur lying immediately under the skin. He could bend the leg, but had no power whatever to extend it; consequently, walked with a crutch and stick, scarcely using the right leg. On examination of the left patella it was also found to have been broken across, the fragments being movable on one another, though in close contact. This had happened several years before; apparatus was constructed to try and steady the bones, but the upper fragments of the patella, and the adjacent part of the thigh, were so tender, that no pressure could be used, and the man became impatient for some more decided treatment. The usual incisions having been made, and the bones exposed, three-quarters of an inch of the femur, and a thin slice of the upper ends of the tibia, were sawn off, and before this, the fragments of the patella were dissected away; the bones were secured in good position by splints behind, and on either side well padded; no unfavourable symptom followed suppuration; and, after a time, the discharge gradually diminished. On June 19th the wound was nearly healed, and there was pretty firm union between the bones, though he could not raise the limb from the bed. On the 21st the wound had long been soundly healed and the bones firmly united. He could raise the limb from the bed and bear some weight upon it, and could move about very well with crutches[a].

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[a] Lancet, vol. ii. p. 281.

CASE XIII.—Mr. Birkett, of Guy's Hospital, excised the knee-joint of a man, aged 34, who was the subject of incurable disease of the knee-joint, 29th of May, 1855. The patient was put under the influence of chloroform, and a single flap was made in front of the joint, which, after division of the ligamentum patellæ, was reflected upwards with that bone; the lateral ligaments were next divided, and then the crucial; forcible flexion of the joint was then made, and the inferior articular extremity was sawn off; next, the inferior articular extremity of the tibia, and then the articular surface of the patella. The arteries now secured, the ends of the tibia and femur came together in very good apposition, and the cut surface of the patella rested on them in front; the remaining portion of the bone appearing to be superfluous and projecting, it was removed from the flap; sutures were employed to adjust the flap, and water-dressing was placed over the wound. The limb rested on a back splint, and sand-bags were placed at the sides to keep it steady.

On the third day he vomited, occasionally had great pain in the part, apparently from muscular contractions. The dressings used had been changed, and a pillow and sand-bags substituted for the splint, which was thought to hurt him; *but*

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[a] Association Medical Journal.

he could not do without the splint, which was again applied. At this dressing three ligatures came away. A short time afterwards hemorrhage occurred, but was soon controlled by cold applications. The entire wound was, however, filled with coagulum. On the sixteenth day after the operation, the wound began to slough; the pain became very severe, with subsultus tendinum; increased restlessness; occasional delirium at night, and complete prostration. The terchloride of carbon was used as a lotion; the strong nitric acid applied; all the support and stimuli that he could take were given; and in about fourteen days from the commencement of this attack the wound had assumed a healthy aspect, and the powers of the patient were much improved. "During this time, however, it was extremely difficult to retain the ends of the bones in proper relation to each other, and the end of the tibia was drawn backwards behind that of the femur. The flap had almost entirely sloughed away, and it appeared that the powers of the patient were scarcely sufficient to carry him through the repair of the part. In addition to this, it did not appear probable, even if the part was healed, that the limb could ever be a useful one." On the thirty-eighth day after the first operation, Mr. Birkett amputated through the femur in the usual manner. "For several days his progress was so favourable, that he was carried out of the ward into the air, and this improved his condition materially." After repeated hemorrhages, it was determined to search for the vessel, and it was found to be the femoral, and, after following it up about an inch and a half, a ligature was applied about it. The sheath of the artery about its divided end was converted into an osseous structure; the vessel itself was firmly united to this, and around both was a loosely developed aneurismal sac, formed of layers of fibrine. The patient seemed now reduced to the last extremity, and the stump of the femur projected between the flaps; the ligature came away seven days after its application; and cicatrization advanced favourably. On the 30th August, a small round portion of bone was cut off. The next day the man left the hospital[a].

Case XIV.—Mr. Jones excised the knee-joint of a girl aged 9, August 20, 1855. The case is peculiarly interesting, owing to the varied amount of the disease of the leg, yet by the wise judgment of this distinguished surgeon, the recovery was perfect, and an admirable limb preserved. It would appear that for two years the child had been unable to walk without crutches, and in despair returned to Jersey to have the limb removed. The child's appearance indicated a strumous diathesis: there was considerable emaciation; her appetite was very indifferent; pulse 106; nights sleepless, &c. The affected leg and knee presented an extraordinary appearance,—the tibia was dislocated backwards, its head being thrust completely into the ham; the popliteal vessels were thus rendered easily perceptible; the patella, which rested in the interspace between the condyles of the femur and the head of the tibia, was so atrophied as to be scarcely distinguishable; the head of the tibia was much expanded, also the whole shaft of the bone generally, and the integuments were in a state of *gonflement*; an open suppurating surface existed along its entire length, the bone being exposed in many parts, and distinguishable by the probe everywhere; several fistulous apertures existed laterally and posteriorly, three also along the fibula on its outer aspect; the probe detected bone in all of them. There existed an immense amount of lateral motion in the dislocated joint; the muscles of the thigh were much atrophied; the motions of the ankle-joint were natural. The patient was put under the influence of chloroform, and the following operation performed:—An incision beginning just below the patella was carried downwards along the almost entire length of the tibia. It was made in rather a zigzag manner, in order to include as many of the fistulous openings as possible; the integuments were then dissected on either side of the bones, so as to expose the diseased parts thoroughly. In many places the tibia was found divested of its periosteum; in others it was thickened and rough; while at its upper and lower thirds, it was so softened as to necessitate scooping out to a considerable depth before healthy cancellous structure was met with; the gouge and chisel had, therefore, to be freely employed throughout. After removing as much diseased bone as could be seen, the next step was excision of the knee-joint. This was performed, first by making a horse-shoe flap, and then proceeding in the manner generally followed, though the extremely disorganized state of the joint rendered the removal of those parts which compose it much more difficult than is ordinarily the case. A large portion of the joint-ends had to be removed; likewise the head of the fibula, and a large sequestrum from the upper third of this bone; the patella, after gouging its under part, was left. After the operation, the leg was placed in a suitable box, and kept steady by means of pads, &c. &c. At the expiration of ten days there was an evident amelioration in the little patient's health; five weeks after the operation she was able to raise the whole limb; and three weeks after this went about the wards on crutches; scarcely three months elapsed when she moved about without any appliances to the knee[a].

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[a] Lancet, 1856.

Case XV.—On the 24th of August, 1855, Mr. Holt excised the knee-joint of a charwoman, aged 47, for persistent disease, of seven months' duration. At the time of the operation the patient was greatly emaciated, and the leg flexed upon the thigh; the hamstring tendons having been previously divided, the semilunar incision was employed, and the extremities of the bones were removed in the usual way; an opening was afterwards made in the popliteal space to afford a ready outlet for the discharge; the limb was afterwards brought into the straight position, and placed upon a splint. On the consecutive days of the following week she appeared to be progressing most favourably; there was a total absence of pain or starting; the wound wore a healthy aspect, and there was healthy purulent secretion. From her previously exhausted condition a generous diet was allowed, of which she partook freely. The constitutional symptoms were comparatively trifling, and very much less than those usually following amputation. On the eighth day she complained of soreness over the sacrum, and although immediately placed upon the water-bed, the sore continued to extend, and she died on the eighteenth day.

The post-mortem examination showed the extremities of the bones covered with lymph, with a degree of vascularity which augured well for recovery[b].

Case XVI.—The following excision was performed by Mr. Statham in University College Hospital, September, 1855. Patient, a little girl, aged five years, with the ends of the tibia and femur enlarged, tender, and probable suppuration up the thigh and in the joint. An exploratory puncture was made, pus escaped; lateral flaps exposed the joint; about two inches of the end of the femur were removed; it was enlarged, softened, and the cartilage absorbed in various distinct spots through its entire thickness between the two condyles; the deeper soft parts were in gelatinous-gray degeneration. Although the head of the tibia was in a primary strumôus condition, it was merely gouged to a slight extent, on purpose to see if it could be possible to save it, in our present state of knowledge, without removing it from the body. Mr. Statham continues:—"The patient went out some months ago. Her health good, a fistula leading to the joint, the head of the tibia and soft parts over it in a strumous condition"[a].

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[a] Medical Times and Gazette, June, 1856.

[b] Lancet, 1856.

Case XVII.—A young man, aged 15, was admitted into King's College Hospital, under the care of Mr. Fergusson, for the second time, in December, 1855, with intractable disease of the knee-joint. From this period until the 2nd of February, matters were progressively getting worse. The joint became more swollen and very tender; pressure on any of the bones of the articulation, or any attempt to move the knee, gave intense pain, and the startings of the leg were frequent. The knee had become bent at an angle, pointing inwards, and the limb was two inches shorter than its healthy fellow. A wound which had been made on the outer side of the joint discharged purulent matter; and the patient's health seemed suffering only from the irritation of the joint. Under these circumstances Mr. Fergusson excised the joint by an H-shaped incision, the transverse cut of which divided the ligamentum patellæ, which bone, being reflected, exposed the interior of the joint; the ligaments were divided to about half an inch of the tibia, and an inch of the femur was sawn off; the inside of the patella was scraped and found healthy; the wound was then stitched up and covered by water-dressing; the limb was placed in a M'Intyre's splint, to which was attached a long thigh splint, which, being fastened on by a perineal band, served to keep the leg steady; the whole was then slung in Salter's swing. The pieces of bone removed were found in a hopeless condition, the synovial membranes being in the last stage of pulpy degeneration, the joint filled with gelatinous matter, and the cartilage absorbed in great measure, so that the bone was exposed at parts, eroded and roughened. On the 8th suppuration was fully established, and the patient's health much improved. On the 5th of March the splint was removed for the first time to readjust the parts, and replaced as before. The bones were pretty firmly united, aud the wound beginning to skin over, on the 4th of April the iron splint was removed, and a gutta percha one, supporting the knee from behind, put on. The patient was then allowed to get up and walk on crutches, with his leg in a sling. On the 2nd of May he was discharged cured; the sinuses nearly healed, the knee stiff and straight; and the patient able to bear his weight upon it when walking; and on the 31st the patient returned to the hospital to show himself. He was able to walk without crutches, having the sole of his boot a little thickened; and he was in a most satisfactory state of health[a].

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[a] Gunshot Fractures and Resections, by S. F. Statham.

Case XVIII.—Mr. Erichsen resected the knee-joint of a man aged 22, who had been admitted into University College Hospital, January 18, 1856. He had been suffering with disease of his right knee-joint for six years, but it had been especially bad for the last three, from a chronic inflammatory condition. On the 6th of February chloroform was given, and Mr. Erichsen operated, making a semilunar incision around the lower border of the patella, cutting through the ligamentum patellæ and lateral ligaments into the joint; the patella was then raised, and, after careful dissection, an inch and a half of the femur were sawn off, and three-quarters of an inch of the tibia; the under surface of the patella, where the cartilage was ulcerated, was scraped; the articular cartilages were for the most part destroyed, and yet there had been no grating; the articular end of the tibia was very soft, and contained a small abscess, from which was let out some thick pus. The limb was now straightened, placed upon a splint; the ends of the bones were brought almost into contact with one another, the anterior flaps laid down and sutured. On the 18th of April his health was much improved; the wound almost entirely healed, and a tolerably firm anchylosis was supposed to have taken place. On the 4th of June he had been going on favourably; the ulcers were healed; there was a little sinus at the inner side of the joint, and scarcely any discharge from it. He had been walking about the wards on crutches; and his general health was very much better; and the report further states, he looked cheerful and contented, and performed his functions well. On the 10th he was discharged, to go into the country[b].

Case XIX.—On the the 9th of February, 1856, Mr. R. W. Coe, Surgeon to the Bristol General Hospital, excised the knee-joint from a little boy aged six years. "In performing the operation," writes Mr. Coe, "I departed in some degree from the ordinary plan. I made a semilunar incision, beginning at the outer side of the joint, and carried it round above the patella to the inside; there was thus a semilunar flap formed, which fell down over the head of the tibia. The joint was acutely inflamed, the loose synovial membrane much thickened, and a considerable quantity of coagulated lymph lay in the various recesses, as it were, of the joint. On passing a probe now through the sinus, it made its appearance in the joint, underneath the back part of the external semilunar cartilage." Mr. Coe continues:—"I then removed half an inch, or a little more, of the femur, and a quarter of an inch of the tibia, when there was exposed the track of the sinus and a small cavity filled with soft gelatiniform granulations. Instead of taking off so much of the tibia so as to include all this in the resection, I gouged out the diseased part, leaving, as far as I could judge, nothing but healthy tissue behind. After paring away the synovial membrane from the back part of the patella, the trochlea, and back part of the condyles of the femur, the parts were brought together by sutures, and the limb placed on a splint made purposely for it. On February 10 the splint was found not to answer, and he was moved into an ordinary swinging splint; three weeks after the operation a collection of healthy pus, which had formed in the neighbourhood of the ligamentum patellæ, was let out; the walls of the abscess united almost immediately after all the pus had escaped, and from February 9 to May 8 he has had but one dose of physic. By the end of the eighth week he was able to move freely about in bed; by the end of the ninth week he could get about the ward on his crutches; before the end of the tenth week he could bear his weight on the affected leg, and use it in going about the ward."

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[a] Lancet, vol. ii. 1856.

[c] Lancet, vol. ii. p. 253. 1856.

Case XX.—Mr. Fergusson excised the knee-joint of a young woman aged 20, who was admitted into King's College Hospital, January 16, 1856. She suffered for more than two years, and the local affection originated from having violently struck the knee against a stone; gradually the disease seized upon the part, and there was a constant aching pain in the joint, not limited to one spot, but extending across the condyles of the femur; all the bones about the joint were very tender, and she complained of much pain if the patella was moved on the femur, or the leg pressed in the thigh, or the fibula against the tibia. Various modes of treatment, blistering, &c., were had recourse to, with little change, up to the 1st of March, and as Mr. Fergusson was of opinion none could be looked for, for some months, and the result was quite uncertain, the patient earnestly requested some operation might be performed. Mr. Fergusson decided to excise the joint on this date, and it was performed by an H-incision; after which about three-quarters of an inch of the femur were removed, and the same quantity from the tibia, but that bone was then discovered to be in an unsound state, having an abscess in the centre filled with scrofulous pus; another half-inch was, therefore, removed, and some further portions with the gouge. The patella, which was only superficially affected, was scraped and replaced, vessels were secured, and the limb placed upon an iron splint with a foot-piece; the sides of the splint opposite the joint being cut away for the convenience of dressing; a long thigh splint, with a corresponding piece cut away opposite the knee, was also fitted on and fastened by a perineal band in the usual manner, so as to keep up extension, and prevent rubbing of the ends of the bones. On examination the disease was found to have proceeded much farther than had been anticipated; all the synovial membrane was rough and thickened from chronic inflammation, but in the tibia the disease was found to be far more extensive; the deep surface of the articular cartilage was found separated from the bone, which was ulcerated; a small abscess had formed, which extended to some depth in the centre of the bone, and the cartilage had not been ulcerated through. On the 17th her pulse was 100, and she looked much better than she had done; in fact, her appearance would not lead any one to suppose she had recently undergone a severe operation. On the 22nd, the report states, the wound was healed, with the exception of one or two spots on the lateral incisions; the long splint had been discontinued for a week past, and union getting slowly firmer. General health excellent. On the 15th of July she was put upon cod-liver oil, under which the wounds rapidly healed up, and she left hospital in the beginning of August[a].

Case XXI.—Mr. Stanley excised the knee-joint from a girl aged fifteen years, on the 29th of March, 1856. She had been an inmate of another hospital for twelve months, and now was considered a favourable subject for resection. She was given chloroform; and Mr. Stanley made a semicircular incision around the lower border of the patella, dissected the flap off, and reflected it upwards; in doing this he let out a quantity of sero-purulent fluid from the cavity of the joint. The whole of the articulating cartilages were found destroyed on opening the articulation, and the surfaces of the bones in a diseased condition. He sawed off a thin slice of the condyles of the femur, and the same off the head of the tibia; at the same time removing all the diseased cartilages and structures surrounding the joint. "The patient was shifted every few days, and consequently, never being firmly fixed, the flexor muscles gradually drew the leg behind the thigh, although the tendons did not appear tight; of course the original wound gaped, and became very extensive." On the 5th of May her condition was as follows:—"The leg was in a semiflexed position, lying on its outer side, with a large, raw, ulcerating surface over the seat of the wound, discharging a great quantity of matter; the limb, moreover, was very tender, and she could scarcely bear it to be touched, much less moved; her pulse was quick, what might be called an irritable jerking pulse." Her health now began to fail, from the great drain of such a large granulating surface; the vital powers were becoming weakened, the heel sloughed, and debility was increasing. "Her leg, therefore, was amputated above the knee, to save life, on the 10th of May, under chloroform, and after a few days her health began to improve; the stump was nearly healed by the 10th of June, and in the early part of August she left the hospital well"[a].

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[a] Lancet, August 30, 1856.

CASE XXII.—Professor Bowman, of King's College, excised the knee-joint, in private practice, of a lady aged about 30, near the end of April, 1856. The disease was a pulpy thickening of the synovial membrane; it was of eighteen months' standing; no abscess had formed. She had been long in a state of great suffering, for which morphia was constantly administered, and she was considerably reduced. Mr. Bowman, on the above date, operated, removing the articular ends of the femur and tibia, taking off about an inch and a half of the former, and half or three-quarters of an inch of the latter. He also cut away all the diseased synovial membrane. Mr. Bowman, writing to me on the 29th September, 1856, says, in reference to the operation:—"The knee went on very fairly for two months, but the system never rallied; for the last two or three months the patient's health has been declining, and I now despair of her life. I do not think she can long survive. There is a want of firm union between the ends of the bones; there are long sinuses extending up the thigh, with very considerable discharge. The dressing has been most assiduously and ably conducted by a medical friend, but it has been very troublesome and tedious. There has been, however, for the three last months such a complete absence of her old pain that she has quite left off her morphia,—and this has been her only gain by the operation."

CASE XXIII.—The following case occurred under Mr. Cutler, St. George's Hospital:—Robert D., aged 15, was admitted on account of synovial inflammation of the left knee, in January, 1856. He had been previously a patient of the hospital for about a year. When admitted, he was complaining of great pain in the joint, had rigors, and there seemed reason to apprehend the formation of matter. This point being decided a few days after his admission by an exploratory puncture, Mr. Cutler opened the joint, at first by a small, but afterwards by a free incision, as that appeared insufficient; no acute symptoms followed the opening of the joint, but the pain was only slightly relieved, and the suppuration continued abundant. Under these circumstances, after the joint had been allowed to remain open for nearly three months, it was determined to excise the knee, or at least to lay its cavity freely open, and remove so much of the bone as should be found diseased. This was accordingly done, on the 17th April, by a curved incision, running parallel to the lower border of the patella, which bone was turned back, and the joint opened; the synovial membrane and the soft parts in the neighbourhood were found very much thickened, but the bones were found only secondarily affected; accordingly, the end of the femur was only removed, which was softened in its whole texture, and carious on the surface. The surfaces of the tibia and patella each presented a small spot of caries, which was gouged out. The relief from the pain in the knee was complete; the cavity of the abscess, however, did not seem inclined to contract, but continued to discharge serous pus. About two months after the operation, during which the boy's strength was gradually declining, it was thought advisable to try country air; he went to Margate, but derived no benefit from the change, and died shortly after a month in London. No post-mortem instituted[a].

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[a] Lancet, September, 1856.

Case XXIV. Mr. Marett, of Jersey, assisted by Mr. Jones, excised the knee-joint of a young woman, aged 19, April 17, 1856. The articular surfaces of the femur and tibia were removed, likewise the patella; the limb is stated to have been placed in Liston's splint, and suspended. The semilunar incision was adopted, and it is reported "that at the end of one month the wound was cicatrized, with the exception of about the size of a sixpenny piece." "She then had an attack of erysipelas affecting the knee, extending to the leg and external portion of the thigh;" an abscess formed in the latter situation, which required to be opened; an abundant quantity of matter flowed from it, and still a slight serous discharge oozes from it. On the 29th of November, the report which I have received, through the kindness of Mr. Jones, states, "she is now able to walk with ease, with the help of a person to support her on one side, and the assistance of a stick."

Case XXV.—Mr. P. Price, of the Metropolitan Infirmary, at Margate, excised the knee-joint of a girl aged 15, on the

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[a] Lancet, 1856, vol. ii. p. 281.

17th of May, 1856, for incurable disease of the left knee-joint. The patient being placed under chloroform, the usual H-shaped incision was carried through the integuments; the perpendicular incisions, however, were made so as to connect the fistulous openings which existed in the line of the lateral ligaments, while the transverse cut ran over the centre of the patella. The patella was removed. What remained of the synovial membrane was in the last stage of pulpy degeneration. The inter-articular cartilages were entirely destroyed; the condyles being cleared of all soft tissues, their articulating surfaces were removed to about an inch; the cut surfaces, however, not appearing free from strumous deposit, another slice was taken away. The head of the tibia was excavated by a large abscess; a slice was removed, about three-quarters of an inch in thickness; and the remaining cavity of the abscess thoroughly cleansed by means of the gouge and scoop. The limb was placed in M'Intyre's splint, and a fold of bandage rolled round the foot and leg, and another around the thigh; the wound was covered with water-dressing. On July 14, Mr. M'Intyre's splint was removed, and a gutta percha one was substituted. She could put her foot to the ground, and bear some degree of pressure upon it. On August 30 her condition is thus described:—For the last six weeks the patient has been daily gaining strength, and improving in general health; the wounds have almost healed, and the girl spends all her time out of doors, being able to go about, although she has not over-much confidence in the shortened limb. A strong gutta percha splint protects the part. The length of the sound limb, from the tip of the inferior spinous process to the heel, the foot being placed at a right angle to the leg, is 29 inches, while the length of the other is 27 inches. The anchylosis is in most respects of a fibrous character, but the motion is becoming less every week[a].

CASE XXVI.—Mr. Moore, Middlesex Hospital, excised the knee-joint from a tall, well-made man, aged 24, by occupation a navvy, for deformity of the leg. Fourteen years before, he was a patient in the Herts Infirmary for four months, after which he had been able to work; but there was great deformity of the leg, mainly at the knee-joint. Four months before, he struck the knee, and since that time it had been very painful, and much swollen; the swelling, however, had considerably diminished, and the pain was less. On admission it was found there was an old dislocation of the head of the tibia outwards, with free movement of the joint; with considerable pain and slight effusion. The general health appeared to be good. On the 21st of May, Mr. Moore performed excision, the patient being placed under the influence of chloroform. The joint being laid open, was found healthy; but the head of the tibia was thrown so far outwards as to render the limb almost useless in this state. The cartilage, together with the bone which was covered by it, was sawn off from both the tibia and femur; a cavity was cut into the head of the tibia, which contained no pus, but appeared to be fully developed bone. It being thought proper to leave an exit for the discharge from it, a V-shaped piece of bone was removed from the head of the tibia; the patella was not removed. The denuded extremities of the bones were then adapted to one another, and after the integuments were brought together by sutures, the limb was placed on a straight splint, at the back of the leg. In the evening the parts had to be opened on account of hemorrhage, all sutures removed, and the parts left exposed for the night. At 9 the following morning they were brought together again. On the 24th constant vomiting set in, which continued until the morning of the 25th, when he died. At the autopsy some of the larger bloodvessels were found filled with coagula. All the viscera were healthy, except the kidneys, which were pale and flabby, granular and fatty, mottled on their surface, with their capsules free[a].

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[a] Lancet, 1856.

Case XXVII.—The following case is one of deep interest:—A young woman, aged 26, was admitted into King's College Hospital, under the care of Mr. Fergusson, March 1, 1856. She had suffered many years with strumous disease of the left knee-joint; but it did not exist internally in proportion to the amount of suffering present. This girl had been in hospital before, and received temporary relief; but now her annoyance was so great, that she became impatient to have excision done. Mr. Fergusson complied with her wishes, as the limb was totally useless to her; and whenever she attempted to walk, the malady came back in an aggravated form. On May 24, after chloroform being given, Mr. Fergusson excised the joint; about an inch of the femur was first sawn off, and then the same quantity of the tibia; the patella was left, but a portion of its incrustating cartilage was destroyed, leaving the bone bare; this was gently scraped. There was not the amount of disease in the joint, when laid open, that might have been expected, as the cartilage of the femur was almost entire; but there was an extension of the growing disease in the synovial membrane, such as large pulpy masses at its side; the same were forming on the top of the tibia. On the 1st of June there was a marked change for the worse; she was seized with severe pain in the right side, much increased by a long breath, and felt low and faint, and very sick; and on the 9th she gradually sank, and died at 4½ P.M.

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[a] Lancet, 1856.

At the autopsy the ends of the bones were found in a necrosed condition; the soft parts around were in a sloughy state, and the periosteum was stripped off the back of the end of the femur for about two or three inches. The femoral vein, for three inches at its upper part, was found completely blocked up by a dense clot, which adhered firmly to its sides; above this was a clot of healthy fibrine. The popliteal and posterior tibial veins were filled with pus, and a firm clot was found along the upper third of both of the posterior tibial veins; the clots extended up to the bifurcation of the iliacs. Fluid was found in both pleuræ, and an abscess, the size of a walnut, in the lower part of the right lung[a].

CASE XXVIII.—Mr. Thomas Windsor, Surgeon to the Salford Royal Hospital, excised the knee-joint of a young man, aged 18, on the 29th of May, 1856. History taken from the Medical Times, November 29, 1856:—He was admitted May 24, 1856. Two years since last Good Friday the right knee gradually swelled, with pain in walking; none when quiet; the skin was of its natural colour; he went into the country, and the knee seemed to get nearly well; after a little time it commenced again, and he went into the Manchester Infirmary; the joint becoming worse and worse, he became a home patient of the Salford Hospital in March, 1856, and had then cough, with considerable expectoration and night-sweats; by treatment his general health improved, but the knee became more swelled, and excessively painful.

Present State.—Leg considerably flexed on thigh; flexor tendons contracted; knee rounded in form; patella prominent; skin normal, rather tense; in consistency dense, and rather hard; no fluctuation; motions of flexion and extension very slight; some lateral motion; slight crepitation when the joint is moved; the pain is most severe on the inside of the knee, and is much aggravated by the slightest motion or pressure. No disease of the chest can be detected; there are now no night-sweats, no expectoration, and but little cough; appetite good. Pulse 96, full; no thirst; bowels regular.

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[a] Lancet, September 6, 1856.

May 29th. Excised the joint; H-incision; removed about an inch and a half of the femur with the saw, the surfaces of the tibia and patella with a chisel; two small vessels were ligatured; the wounds closed with strips of wet lint, and placed in a frame. The crucial ligaments were almost entirely destroyed; the cartilage separated here and there from the bone; the end of the femur worm-eaten, softened, with enlarged cancelli, and great vascularity; the patella and tibia but slightly affected; the synovial membrane thickened; about three hours after, hemorrhage to so great an extent took place that he became almost pulseless; a small artery was twisted, and lint wetted with spirit of turpentine applied to the ends of the femur, from which blood obstinately oozed; ice to be kept constantly round the knee. After this there was no repetition of the hemorrhage, and on May 31st, two days after the operation, it is stated that he had slept most of the night. The enema which had been given was retained, and the calomel was vomited. Not sick during the night, and has vomited once this morning. Pulse 120; irrigation of cold water to be used to the knee.

On the 1st of June he is reported to have slept well; no vomiting; still has a little nausea; bowels not open since operation. Pulse 114; skin warm; tongue dry and furred; no pain in the leg, which is warm, but not swelled.

17th. Tongue red; bowels regular; knee easy; foot a little puffy; back of sacrum rather painful; to have a water pillow.

28th. Has been going on in all respects well, except that a small sore has formed on the back of the sacrum; calf of the leg is a little painful. Dressed the knee for the first time; wound filled up with granulations, perfectly healthy in appearance; he has a little power over the leg, being able to raise it about half an inch.

July 2nd. Starch bandage applied; back rather painful; in other respects going on well; knee quite easy. Pulse 108.

September 3rd. A piece of bone, apparently part of internal condyle, projects through the granulations, and appears dead. Has been a little troubled with diarrhœa.

October 9th. Since last notice the piece of dead bone appears to have made no change, but he has become thinner, feels weaker, his cough has somewhat increased, and for these reasons amputation was decided on, though delayed, owing to the lad's wish, to October 11, when the ordinary circular operation was performed; only about half an ounce of blood was lost. On examination, the ends of the femur and tibia, and the internal surface of the patella, were found softened, worm-eaten, vascular, partially covered with fungous granulations. No anchylosis.

On the 16th he is described as almost pulseless; features pale, sunk, &c. On examining stump, edges ununited; its surface covered with a blackish, sanious discharge. Aromatic spirit of ammonia, &c., to be freely used; poultice to stump.

17th. Gradually sank to-day. No examination allowed.

CASE XXIX.—Mr. Jones excised the knee-joint of a young woman, aged 23, June 20, 1856, and thus writes to me, November 29, 1856:—"My last case is still in hospital, and under treatment. The patient, an adult female, aged 23, received a blow on the right knee, last June four years. From this date to her admission to the hospital, last May, she consulted several surgeons, and underwent a variety of treatment. None succeeded: so excision was performed the beginning of July. For three weeks not an unfavourable symptom occurred; on the contrary, there seemed every hope that a most rapid recovery must take place. Unfortunately, several cases of erysipelas were at that time in the hospital, and my patient had a most severe attack, which, with infinite trouble, she recovered from. Strange to say, a month after, she had another, quite as severe as the first. One extraordinary feature existed each time—the erysipelas commenced *above* the excised part and *below* it, extended up to the groin and down to the toes, leaving a space of fully four inches perfectly free of even the slightest blush. These attacks caused sinuses to form, and, altogether, my poor patient's health became sadly shattered. I am, however, happy to say, that she is now recovering rapidly, and I have no doubt will get perfectly well, with a *useful limb.*"

CASE XXX.—Mr. Erichsen excised the knee-joint of a boy aged nine years, affected with pulpy degeneration of the synovial membrane. On admission (May 30, 1856) the affected knee was found to be semiflexed, measuring twelve inches and three-quarters round, whilst the sound one measured only ten inches. The heads of the tibia, the condyles of the femur, and the patella, were not enlarged; the tissues around the joint were thickened and swollen, with an ulcerated patch, the size of a half-crown piece. It was found a probe passed readily within the joint. On the 2nd of July the boy's health appeared delicate, and the ends of the bones constituting the joint moved freely anteriorly as well as laterally, and the articulation was much swollen. Mr. Erichsen, at this date, performed excision of the joint, under chloroform, making a semilunar incision below the patella, reflecting up the flap, and, with Butcher's saw, removed a thin slice of both bones, not more than three-quarters of an inch altogether, cutting the tibia from behind forwards. The lower part of the femur was found much inflamed, and could be cut away easily with a knife; the synovial membrane was affected with a pulpy thickening and a commencing disorganization. This pulpy matter existed around the joint in large quantity; the edges of the wound were brought together, and the limb placed on a straight under-splint. On the 7th a slight attack of erysipelas seized on the part, but in a few days was arrested. On August 3rd the anchylosis had commenced, and the limb was placed in a strong leather trough, a many-tailed bandage over the limb, and the wound dressed with water-dressing. On the 21st there was scarcely any discharge from the abscess, and the wound was just cicatrized over. The boy had not one bad symptom, and he expressed himself very easy and comfortable. On the 3rd of September he was quite stout and healthy, the joint firmly anchylosed, and the wounds healed. His recovery was perfect[a].

Case XXXI.—For the particulars of this case and the next, I am indebted to the kindness and courtesy of Mr. Humphrey, of Cambridge. Thomas Hodson, aged 29, admitted into Addenbrooke's Hospital, May 21, 1856; a thin, pale, very unhealthy-looking man, with disease of the left knee, of three years' duration. It had commenced apparently in the synovial membrane, and had subsequently involved the cartilages, and extended to the bones; the limb was wasted, and he could not lift it from the bed; the knee was not much swollen, but the joint was evidently destroyed, and disease was progressing. Accordingly, excision was determined on soon after he came into the hospital, but was deferred for a time, in consequence of the very indifferent state of his health. In the meantime an abscess formed above the outside of the knee, and burst, leaving a most foul ulcer communicating with the joint, and confirming suspicion that the bones were involved in the disease. His health continued as bad as ever, though the ulcer assumed a more healthy aspect. He was anxious for some relief, but unwilling to submit to amputation. It not being prudent to delay any longer, in the vain hope of improving his health, while the system was subjected to the irritation of the local disease, Dr. Humphrey performed excision July 18, 1856. A crucial incision was made in front of the joint; the patella was removed, and the articular ends of the bones sawn away; that of the tibia had a large and deep ulcer in it, the saw passed below this, through healthy bone; the synovial membrane was not much thickened; the bones came into good position, and the limb was bandaged upon a straight splint, and supported by a long broad splint on either side. Immediately after the operation his health began to improve, and his tongue to clean; no fever or constitutional disturbance being excited by it, and no swelling of the leg or thigh following for two or three weeks; then suppuration took place in the upper part of the calf and the lower part of the thigh, requiring a free incision in each situation. After this the case went on well, the wounds nearly healed, and the bones became united by firm medium, so that he could throw the leg about, and was able to bear some weight upon the limb when he left the hospital, in the beginning of October.

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[a] Lancet, September 6, 1856.

Case XXXII.—This, the fourth case operated on by Mr. Humphrey, is exceedingly valuable, and I feel deeply indebted for his copious notes of it. John Crawley, aged 20, admitted to Addenbrooke's Hospital, July, 1856; a spare, sallowish, unhealthy-looking lad, with synovial disease of the left knee. There was great swelling, and a good deal of pain at night, with startings which awoke him from his sleep; the thigh and leg wasted, and he was unable to lift the limb from the bed. The disease was of three years' duration, and there was little prospect of its cessation, still less of a useful joint being restored. Although it was probable that the cartilages were involved, yet the disease was chiefly of the synovial membrane, which had become greatly thickened. Mr. Humphrey thought it was a case rather for amputation than excision, but the lad being unwilling to submit to the former, he performed the latter, July 18, 1856. Incision of a crucial form; the patella, the articular ends of the tibia and femur, with as much of the morbid synovial membrane as could be included, were removed: still, some of the latter was left. The cartilages were ulcerated, and easily separable from the bones, which were porous and vascular beneath them. The limb was bandaged upon a splint, and supported by lateral splints, as in the former case. "At first," writes Mr. Humphrey, "the case went on very fairly; there was not much inflammation in the part, or much constitutional disturbance; and there was every prospect that union was taking place between the bones; still, the swelling did not subside; suppuration continued from many points, and the union of the tibia with the femur did not become more firm. Every now and then there was an accession of suppuration, and the man's health began to fail." In the early part of October Mr. Humphrey proposed to amputate, to which the patient did not assent until November 4, when the limb was removed at the junction of the middle and lower thirds of the thigh. The young man is now rapidly recovering.

Case XXXIII.—Mr. P. Price, in the Metropolitan Infirmary, Margate, excised the right knee-joint of a boy, aged nine years, July 28, 1856, being affected with incurable disease. The H-shaped incision was adopted; on opening the joint a quantity of pus escaped; the synovial membrane was of a dark purplish colour, much increased in substance, and gelatiniform in consistence; the inter-articular cartilages were destroyed, and the cartilages of incrustation partly removed; about three-quarters of an inch of the condyles were cut off, and a good half-inch was removed from the tibia; the patella, which was ulcerated on its under surface, was taken away; difficulty was experienced in overcoming the hamstring muscles, and bringing the bones in apposition; the limb was placed in a splint, and fastened with rollers. On the 3rd of August he became very troublesome, and could with difficulty be kept quiet; he had contrived to loosen the bandages, so that the thigh had been slightly moved from its former position, and it was necessary to put the entire limb up fresh. On the 7th of August he was so irritable that the surgeon was obliged to put a Liston's long splint on the oustide of the limb, extending as high as the armpit, that he might not run any danger of disturbing the bones. On the 30th he was reported as certain of a good recovery[a].

Case XXXIV.—Mr. Coe, Surgeon to the Bristol General Hospital, has sent me the following most interesting particulars relative to a second case in which he excised the knee-joint. Patient, a little boy, aged 4½ years, of well-marked strumous habit. He was admitted to hospital July 28, 1856. Two years ago he complained of severe pain in the vicinity of the left knee, and three months before his admission a large abscess formed below the knee, and burst, discharging a large quantity of green offensive matter. On July 28 a fistulous opening on the anterior and inner aspect of the head of the tibia marked the aperture; the knee-joint itself was likewise swollen and painful; on the introduction of a probe a small piece of dead bone was felt, not far from the surface, and the probe passed without obstacle even far deeper towards the joint; an incision was made upon the dead bone, and a piece removed, and the soft parts were freely incised, so as to allow a free escape of matter from the head of the diseased tibia.

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[a] Lancet, 1856.

Mr. Coe writes, it was impossible to gouge any part of the bone away, owing to the close proximity of the diseased part of the joint. Up to 23rd of August the boy improved, the swelling and pain in the knee-joint subsided, and hopes were entertained that the case would do well without further interference. On this date, however, there was a sudden accession of mischief in the joint, accompanied by the most violent constitutional disturbance. Mr. Coe was inclined at once to operate, but he yielded to the suggestions of others, and tried general antiphlogistic means, &c., all of which were exercised without success. On the 28th of August the joint was excised; the usual semilunar incision was adopted in this case; three-quarters of an inch of the end of the femur was sawed off, and the thickened synovial membrane cut away from the back of the patella and trochlea of the femur; the articulating surface of the tibia presented a small opening, the size of a pea, leading from the internal tuberosity into the joint, thus forming a communication externally; a vertical incision was then made through the soft parts, from the centre of the wound, laying open the joint, and carried down to a sufficient extent to expose the carious tibia; the triangular flaps were dissected back; a thin slice of the articulating surface of the tibia, one-third of an inch thick, was sawn off; this brought into view a hollow, the size of a filbert in its internal tuberosity; a wedge-shaped piece, the base above, including all the diseased part, was cut out; thus, Mr. Coe writes, all the diseased bone was cleared away, and a channel established for the escape of secretion; the wounds were brought together by five points of suture, and the limb placed on a swinging splint. The case progressed most favourably up to September 4; but, shortly after, the angles of the wound refused to heal, and in about a month after the operation the tissues covering the lower part of the femur became swollen and painful, and the cicatrix threatened to give way; however, both the local and constitutional disturbances were soon alleviated by a free discharge of pus from beneath the flaps; a free incision also of the fascia lata was made, which arrested the matter in passing upwards; from this period he gradually improved, and hereafter I shall notice his present condition.

Case XXXV.—On the 20th of January, 1856, Frederick F., aged 23, a baker, a pale, strumous-looking man, was admitted into King's College Hospital, under the care of Mr. Partridge, with disease of the knee-joint. Various modes of treatment were adopted, and without any beneficial effect; therefore, on the 30th of July, Mr. Partridge excised the joint after the following manner:—The patient was put under the influence of chloroform, and an H-shaped incision made (the lateral incision being made well back), the anterior aspect of the joint at the level of the lower edge of the patella was opened, on dividing the infra-patellar ligament, and the bone reflected upwards. The synovial membrane and ligaments about the articulation were then cut though. The joint now being put in a flexed position, the articular ends of the femur and tibia were successively sawn off. The loose portions of degenerated synovial membrane having been clipped away, the cut surfaces of the bones were placed parallel to each other, and the incisions united by sutures. On examining the removed portions, there was found extensive ulceration of the cartilages, especially in the inner condyles of the femur, which was almost bare. On the 14th the splints and bandages were removed for the first time since the operation, and the wounds looked well. On the 23rd the granulations were looking rather profuse; external and internal wounds closing; transverse cicatrizing at either extremity; no pain now. On 29th, discharge very scanty, abscess above the knee quite closed; was able to sit up in bed[a].

Case XXXVI.—Mr. South, on the 9th of August, 1856, excised the knee-joint of a woman, aged 40, for incurable disease of the part. He adopted the semilunar incision right across the joint, and removed about an inch and a half of the lower end of the femur, and an inch of the tibia; the line of this incision entered the sac of a large abscess. The wounds, by the 6th of September, were entirely healed up; two or three little ulcerated spots remained, from which exuded a few drops of pus; there was no pain or uneasiness, and, so far as the operation is concerned, the result is satisfactory; the limb has a tendency to turn inwards, and is a little twisted; the general health is perfect in every respect[b].

Case XXXVII.—Mr. Brace, Surgeon to the Bath Hospital, excised the knee-joint from a man aged 27 years, for disease which had resisted treatment for eighteen months. On the 16th of August, 1856, "one inch from the femur, and half an inch from the tibia, were removed; the synovial membrane was extensively disorganized, and the incrustating cartilage on the head of the tibia widely destroyed, and in one spot the bone bared, the cancellated structure of the bone softened." The man died twenty-four hours after the operation.

Case XXXVIII.—Mr. Humphrey, Addenbrooke's Hospital, Cambridge, cut out the knee-joint from a boy aged 12,

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[a] Lancet, vol. ii. p. 279. 1856.

[b] Lancet, September, 1856.

August 31, 1856. The history of this case is, I conceive, peculiarly interesting. The child was admitted with the knee bent to a right angle; indented cicatrices of sinuses, which had evidently extended deeply, told of former serious disease; at this time all acute symptoms had passed away; there was no swelling and no pain, but the joint had been destroyed; no movement could be effected, and the limb was rendered quite useless by the contraction. The patient was placed under chloroform, and extension was made carefully and steadily; the joint yielded without much difficulty, and was straightened and fixed upon a splint bound to its hinder part; it was kept thus for several weeks, and being done up in a gum-chalk bandage, the patient was allowed to turn upon it a little; the progress, however, was not satisfactory: the joint gained no strength; the limb was quite unable to bear the weight of the body; the contraction began to recur; and it was evident the limb would remain a useless one; therefore, on the above date the operation was performed. The patella was firmly anchylosed to the femur, and was accordingly left, the tibia and femur were united by firm fibrous tissue, which was partly divided by the knife, partly torn in flexing the joint. A small portion of each bone was removed, and the limb placed in a straight position, supported by splints. The operation was not followed by any febrile disturbance or bad symptoms; suppuration took place in the usual manner, and subsided as the healing of the wound went on; the latter process was completed in little more than a month, and in about two months there was firm union between the bones[a].

Case XXXIX.—Mr. Square, of Plymouth, excised the knee-joint from a boy aged 11, August 25, 1856. He adopted the H-incision; removed a thin slice from the patella, a quarter of an inch of the articulating surface of the tibia, and two inches of the femur. The boy had a very severe attack of scarlatina six days after the operation. Mr. Square writes thus to me, November 23, 1856:—"The discharge has not been very profuse; no abscesses have been opened, and after the subsidence of the scarlatina he had but little constitutional disturbance. His constitutional health and general condition are now moderately good. The size of the joint is still much enlarged, and the vertical incisions are not healed; flabby granulations keep the edges apart."

Case XL.—Mr. H. Thompson, Assistant Surgeon to University College Hospital, excised the right knee-joint from a man, aged 37, October 1, 1856. The history is briefly as follows:—"He dislocated his right knee about three years ago; it was overlooked, and remained unreduced in a very bad position, so that he could not use it in walking. His other foot was the subject of talipes equinus from a burn in childhood," and Mr. Thompson states "it had been operated on four times without benefit; consequently, he was a cripple, and progressing rather than walking, by means of two crutches."

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[a] Association Medical Journal.

On the 1st October Mr. Thompson "removed the articulating surfaces of the tibia and femur, broke up the adhesions, bringing the limb into good position. Everything went on well for five weeks, at the end of which time there was very considerable consolidation, and nothing could promise better. He was then the subject, together with two other cases in the same ward, of erysipelas, which produced great mischief; abscesses formed around the end of the femur, and broke up all the adhesions. Writing to Mr. Smith, December 3, 1856, and to whom I am indebted for these details, Mr. Thompson says:—"He has struggled through this with care, and is now in no very favourable condition; there is no union, and much suppuration, and he is weak. I would have amputated the thigh last week, but he would not submit; and now it seems a shade better."

Case XLI.—Mr. Fergusson resected the knee-joint from a young woman, aged 27, on the 11th of October, 1856. Her history is as follows:—She had been married, and suffering from disease of the right knee for eleven months, contracted first from the sequelæ of fever attending childbirth. She was admitted into King's College Hospital during the summer, when treatment of various kinds had been tried, but the symptoms got worse, the patient resisting any operative interference until the above date. The usual mode of excision was adopted: the joint was found in a very diseased condition; there was but little shock, notwithstanding the reduced condition of the patient. I am indebted to Mr. H. Smith for the particulars of this case. And in recently writing to me he says:—"I paid her a visit, November 16, five weeks after the operation; I found the limb in excellent position, the wounds almost entirely healed, the patient improved in condition, and in good spirits, although still very thin and pale."

Case XLII.—Mr. Page, of Carlisle, excised the knee-joint of a young girl, aged 12 years, on the 13th of October, 1856. She had long suffered from disease of the articulation, the cartilaginous surface of the femur being almost destroyed, an inch from the femur, and a thin slice from the tibia was removed, and the limb was restored to the straight position, it having been previously bent at a right angle. The report goes on to state, even after some days, "that the patient so far was in the most satisfactory state."

Case XLIII.—Mr. Price excised the knee-joint of a woman aged 26, in the Metropolitan Institution for Invalid Paupers, at Margate, October 15, 1856. At the time that she came under his notice, in the summer of the present year, she was suffering from symptoms of disease of the cartilages of the left knee-joint, complicated with a large abscess situated in front, and external to the joint. At this time the abscess was opened, and the limb steadied on a splint; after this the disease continued, though the health was improved, and excision was performed on the above date. The condyles of the femur were extensively ulcerated, and bared of their cartilage for some extent; the internal tuberosity of the tibia was excavated by a deep abscess, and bore trace of long-standing disease; the back part of the head of the tibia was likewise necrosed; the posterior portion of the femur between the condyles was likewise necrosed, and a piece of necrosed bone was found separated, and loose in the joint. The extent of bone removed was about two inches and a quarter at the most; the cut surfaces were perfectly healthy; the patella, being healthy, was allowed to remain undisturbed in the upper flap. I am deeply indebted to Mr. Price for the details of this most interesting case.

Case XLIV.—Mr. Page, of Carlisle, excised the knee-joint of a young woman aged 19, October 27, 1856. The disease in the joint commenced twelve years before, after injury, and the limb had been totally useless for sixteen months; it was firmly fixed at an angle of 45°, and much everted. The joint was exposed by means of a horse-shoe-shaped incision, and about half an-inch of each of the bones was removed, together with nearly an inch of the patella, which was firmly anchylosed to the inter-condyloid sulcus, and prevented the bones being placed in close apposition. The disease was found to be limited to the cartilage investing the external condyle, and to the corresponding articular surface of the tibia; the cartilage appeared to be converted into flocculent, fibrous membrane, in which was entangled a small, irregular piece of necrosed bone, not larger than a split pea; and immediately opposite this was a cavity in the head of the tibia capable of containing a pistol-bullet, also filled up by fibrous matter. The cut osseous surfaces looked healthy.

Case XLV.—Mr. Bowman excised the knee-joint from

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a girl aged 16, November 1, 1856. The knee was much enlarged, and bent at an acute angle; the head of the tibia was displaced outwards; strong fibrous anchylosis. The articular cartilage had disappeared from the patella, and in part also from the inner condyle of the femur; the cancellated tissue of the bones was soft; one inch and a quarter of bone was removed; the disease began three years before. I am indebted to Mr. Bowman for this description, and also for the present state of the patient.

Case XLVI.—Mr. Jones, of Jersey, excised the knee-joint of a little boy aged 7, December 2, 1856. For the particulars of the case I am indebted to the courtesy of this eminent surgeon. He writes thus:—"I operated, as I told you I intended, last Tuesday. My patient is a little boy aged 7 years. In this case the disease had been progressing three years; there was considerable pulpy degeneration; the cartilaginous heads of the femur and tibia were in progress of ulceration; the tibia was partially dislocated backwards. Although I removed a considerable portion of bone, I found it impossible to bring the leg straight without dividing the hamstrings. It is still too soon to pronounce any kind of sentence on the little invalid. As usual, I had no vessel to secure."

Case XLVII.—Mr. Bowman excised the knee-joint from a girl aged 16, December 6, 1856. The knee was much bent and enlarged; duration of disease, three years. The cartilages had entirely disappeared from all the bones, excepting a few fibrous patches loosely adhering to the trochlear surface of the femur by soft gelatinous tissue; the exposed surfaces of the bones were rough, but not soft; ligaments vascular and softened; synovial membrane pulpy; abscesses around the patella; two inches of bone removed.

Case XLVIII.—Mr. Hey, of Leeds, excised the knee-joint of a delicate young girl aged 11, in May, 1856. She was four years the subject of diseased knee-joint. The joint was stiff at a right angle, and there was a large fistulous opening. Excision of the whole articulation was performed, a horse-shoe flap being made; and about half an inch from the tibia, and an inch and a half from the femur, being sawn away; the patella was left. The synovial membrane was found thick and pulpy, and the cartilages were extensively ulcerated; both bones were much softened. Subsequent to the operation the extremity of the femur got exposed in the wound, and was removed with the bone-forceps. The same report states:—"The child is doing well; the child's health was rapidly improved, and the wound was healing healthily. It is feared, however, there will be no bony union"[a].

CASE XLIX.—Mr. Hey, of Leeds, excised the knee-joint from a married woman, aged 36, July 12, 1856. Three years before, she received a severe kick in the joint, and disease supervened, and gradually increased up to the above date. In this case the synovial membrane had passed into pulpy degeneration; a large quantity of pus was found in the joint, but no disease of bone, beyond extensive ulceration of the cartilages of the contiguous bones and of the patella. About two inches of bone were removed altogether, and the surface of the patella was pared. Mr. Hey, who kindly furnished me with this report, says:—"For more than a month the case was perfectly satisfactory in every respect, the flap being perfectly cicatrized in three-fourths of its extent,—the matter escaping at the two sides." The report goes on to state:—"On the 24th of August an abscess was opened just below the knee on the inner side, and since that time, at intervals, other abscesses have formed, chiefly in the same situation, and one also in the popliteal space." Writing to me, December 30, 1856, he says:—"The appearance of the limb is now very good, the discharge abating, and a good prospect still exists of a satisfactory result. The health of the patient keeps firm. The union of the bones is by no means complete." Mr. Hey described the same condition to maintain, at the present time, in the first case operated on.

CASE L.—Mr. Quain excised the knee-joint of a young man, aged 26, in University College Hospital, October 9, 1856. He was for four years afflicted with pain in the joint, attended with considerable swelling; and about a year prior to the above date he had been in the hospital, and relieved from pressing symptoms. On this, his second admission to the hospital, the joint and parts in its neighbourhood were found much enlarged, and a good deal deformed, especially at the outer side, where there was considerable bulging; this swelling was tense and elastic to the touch; at the back part of the limb, near the outer hamstring, was the opening of a sinus; the bones were easily moved from side to side, unrestrained by the softened ligaments, and they grated as they passed, one the other. The patient was worn out by suffering, and demanded an operation. Excision was performed with two lateral incisions, joined by a transverse one across the ligament of the patella; as the flap was raised up, an abscess was discharged; it was near the patella, but had no connexion with that bone; an inch of the femur was sawn off in a curved direction, from behind forwards, and a thin layer of the tibia was removed horizontally, with a view to the easy discharge of pus afterwards; a seton was passed backwards near the outer hamstring; the section of the edges of the bones appeared sound; only a few fragments of cartilage remained on the pieces removed, and they were soft and gray; the exposed bone was highly vascular and rough; the small remnants of synovial membrane were likewise vascular and pulpy. Mr. Quain, who has most politely forwarded to me the above details, states, December 30, 1856:—"From the time of the operation the case went on in all respects well for several days; healthy suppuration was established; but on the 16th an unfavourable change was manifest: the wound was dry, suppuration was stopped, and the patient became excited, at a later period even delirious; and he died thirteen days after the operation." The dissection is most interesting:—"A sinus was formed under the vastus internus muscle, invading the crureus, and reaching nearly half-way up the thigh; the lower end of the adductor magnus was pale, and small deposits of pus were found disseminated among its fibres; there was another short sinus behind the femur, and a third, likewise a short one, at the outer side of the leg; both bones were soft at their truncated ends; about an inch of the thigh-bone was scraped away before the natural resistance of the osseous structure was met with. By microscopic examination some fat, but no pus, was distinguished in the softened bone; among the bloodvessels there was no purulent deposit anywhere. The puncture of the seton, which, it should be said, had been removed in a couple of days after the operation, was seen to be between the popliteal vessels and the outer hamstring; the condensation around it was well defined; in the viscera there was nothing worth noticing."

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[a] Medical Times and Gazette, October 4, 1856.

Case LI.—Mr. William Nichols, Surgeon to the Norwich Hospital, excised the knee-joint from a young woman, aged 19½ years, October 11, 1856. About two years ago she was a sufferer from subacute inflammation of the synovial membrane of the left knee-joint; this was treated, but with little behefit, and about six months ago the joint became more swollen, exquisitely painful from every movement, and her general health began to decline from the local mischief; and, under these circumstances, the joint was removed upon the above date. The semilunar incision was adopted; the condyles of the femur and the articluating surface, of the tibia were removed, the tibio-fibular articulation being left untouched. The cartilages were found to be absorbed in patches on the tibia and femur; on the patella not so; the synovial membrane was clipped away; sutures were put in, and warm water-dressing applied. On this day, January 5, 1857, Mr. Nichols has kindly informed me:—"The limb has been kept perfectly quiet in an apparatus made for it; and at this time, thirteen weeks after the operation, I am happy to say the case is going on satisfactorily; the wound is nearly healed, and the limb promises to be a useful one."

Arranged in the Table on the following page are all the cases of excision of the knee-joint which I have been able to collect either from public records or private communications: and it would appear that fifty-one operations have been performed since my last report closed.

Now comes the difficult, and by no means enviable, occupation of analyzing thoroughly the results as given. The review demands grave and serious consideration. The cause of death in each instance must be strictly investigated, as well as the reason of failure in others, demanding, as a *dernier ressort*, amputation of the limb. Out of 50 operations, death followed in 9 instances, from which number 1 must be subtracted, Case XXIII., *partial* excision. 7 were subjected to amputation, and only 1 died. One case is said to be in a precarious way, and all the rest are either cured with useful limbs, or progressing rapidly towards the same result.

The first fatal case, No. III., was operated on by Mr. Fergusson, and died on the fifth day. Now, from the history of the case, it will be seen that the child would most probably have died after any severe operation, for Mr. Henry Smith writes:—"The patient was in a very anemic and bloodless condition, which led one to predict unfavourably of any severe operation." Now it is manifest that here the result should not be ascribed to the *peculiar* operation. Excision of the knee-joint, performed by the perfect and rapid hand of Mr. Fergusson, produced no greater shock, to say the least of it, than would have been incurred by amputation, and one or other was demanded to give the creature a chance for life.

The second fatal case, No. XI., was operated on by Mr. Tatum, and died on the seventeenth day, of pyemia; so he might after amputation. In my opinion, this case was not fitted for excision at all, and amputation should have been performed. In the report it is stated "that the bones were *pretty* healthy

TABLE *of all the Cases operated on from December,* 1854,

A few Cases that occurred prior to the above date, and not

No.	Surgeons.	Hospitals.	Sex and Age.	Date of Operation.
1	Mr. Pirrie, . . .	Aberdeen Royal Infirmary, ...	Male, 10 years,	May 17, 1854,
2	Mr. Brotherston,	Alloa Hospital, ...	Male, 10 ,,	May 19, 1854,
3	Mr. Fergusson, .	King's College Hospital, London, . .	Male. 10 ,,	Aug. 19, 1854,
4	Mr. Landsdown, .	Bristol Infirmary, ...	Female, 12 ,,	Sept. 26, 1854,
5	Mr. Humphrey, .	Addenbrooke's Hospital, Cambridge, .	Female, 20 ,,	Oct. 27, 1854,
6	Mr. Pirrie, . . .	Aberdeen Royal Infirmary, ...	Male, 14 ,,	Nov. 4, 1854,
7	Mr. Hughes, . .	Staffordshire Infirmary, ...	Female, 27 ,,	Nov. 16, 1854,
8	Mr. Fergusson, .	King's College Hospital, London, . .	Male, 4 ,,	Dec. 16, 1854,
9	Mr. Brotherston, .	Alloa Hospital, ...	Male, 11 ,,	Jan. 12, 1855,
10	Dr. Keith, . . .	Aberdeen Royal Infirmary, ...	Male, 33 ,,	Mar. 10, 1855,
11	Mr. Tatum, . .	St. George's Hospital, ...	Male, 18 ,,	May 1, 1855,
12	Mr. Humphrey, .	Addenbrooke's Hospital, Cambridge, .	Male, 47 ,,	May 4, 1855,
13	Mr. Birkett, . .	Guy's Hospital, London, ...	Male, 34 ,,	May 29, 1855,
14	Mr. Jones, . . .	Jersey Hospital, ...	Female, 9 ,,	Aug. 20, 1855,
15	Mr. Holt, . . .	Westminster Hospital, ...	Female, 47 ,,	Aug. 24, 1855,
16	Mr. Statham, . .	University College Hospital, ...	Female, 5 ,,	Sept. —, 1855,
17	Mr. Fergusson, .	King's College Hospital, London, . .	Male, 18 ,,	Feb. 2, 1856,
18	Mr. Erichsen, . .	University College Hospital, London, .	Male, 22 ,,	Feb. 6, 1856,
19	Mr. Coe, ...	Bristol Hospital, ...	Male, 6 ,,	Feb. 9, 1856.
20	Mr. Fergusson, .	King's College Hospital, London, . .	Female, 20 ,,	Mar. 1, 1856,
21	Mr. Stanley, . .	Bartholomew's Hospital, London, . .	Female, 15 ,,	Mar. 29, 1856,
22	Mr. Bowman, . .	Private, ...	Female, 30 ,,	April —, 1856,
23	Mr. Cutler, . . .	St. George's Hospital, ...	Male, 15 ,,	April 17, 1856,
24	Mr. Marett, . .	Jersey Hospital, ...	Female, 19 ,,	April 17, 1856,
25	Mr. Price, . . .	Metropolitan Hospital, Margate, . . .	Female, 15 ,,	May 17, 1856,
26	Mr. Moore, . . .	Middlesex Hospital, ...	Male, 24 ,,	May 21, 1856,
27	Mr. Fergusson, .	King's College Hospital, London, .	Female, 26 ,,	May 24, 1856,
28	Mr. Windsor, . .	Salford Royal Hospital, ...	Male, 18 ,,	May 29, 1856,
29	Mr. Jones, . . .	Jersey Hospital, ...	Female, 23 ,,	June 20, 1856,
30	Mr. Erichsen, . .	University College Hospital, London, .	Male, 9 ,,	July 2, 1856,
31	Mr. Humphrey, .	Addenbrooke's Hospital, Cambridge, .	Male, 29 ,,	July 18, 1856,
32	Mr. Humphrey, .	Addenbrooke's Hospital, Cambridge, .	Male, 20 ,,	July 18, 1856,
33	Mr. Price, . . .	Metropolitan Hospital, Margate, . . .	Male, 9 ,,	July 27, 1856,
34	Mr. Coe, ...	Bristol Hospital, ...	Male, 4½ ,,	Aug. 28, 1856,
35	Mr. Partridge, .	King's College Hospital, London, . .	Male, 23 ,,	July 30, 1856,
36	Mr. South, . . .	St. Thomas' Hospital, London, . . .	Female, 40 ,,	Aug. 9, 1856,
37	Mr. Brace, . . .	Bath General Hospital, ...	Male, 27 ,,	Aug. 16, 1856,
38	Mr. Humphrey, .	Addenbrooke's Hospital, Cambridge, . .	Male, 12 ,,	Aug. 31, 1856,
39	Mr. Square, . .	Plymouth Hospital, ...	Male, 11 ,,	Aug. 25, 1856,
40	Mr. Thompson, .	University College Hospital, London, .	Male, 37 ,,	Oct. 1, 1856,
41	Mr. Fergusson, .	King's College Hospital, London, . .	Female, 27 ,,	Oct. 11, 1856,
42	Mr. Page, . . .	Carlisle General Hospital, ...	Female, 12 ,,	Oct. 13, 1856,
43	Mr. Price, . . .	Metropolitan Institution for Paupers, Margate,	Female, 26 ,,	Oct. 15, 1856,
44	Mr. Page, . . .	Carlisle General Hospital, ...	Female, 19 ,,	Oct. 27, 1856,
45	Mr. Bowman, . .	King's College Hospital, London, . .	Female, 16 ,,	Nov. 1, 1856,
46	Mr. Jones, . . .	Jersey Hospital, ...	Male, 7 ,,	Dec. 2, 1856,
47	Mr. Bowman, . .	King's College Hospital, London, . .	Female, 16 ,,	Dec. 6, 1856,
48	Mr. Hey, . . .	Leeds General Hospital, ...	Female, 11 ,,	May —, 1856,
49	Mr. Hey, . . .	Leeds General Hospital, ...	Female, 36 ,,	July 12, 1856,
50	Mr. Quain, . . .	University College Hospital, London, .	Male, 26 ,,	Oct. 9, 1856,
51	Mr. Nichols, . .	Norwich Hospital, ...	Female, 19 ,,	Oct. 11, 1856,

when my last Report closed, up to December, 1856.

noticed in my former Tables, are also introduced here.

Result as to Life.	Condition of the Limb. Observations.
Recovery,	Amputation of thigh; complications; measles; hectic.
Cured,	With perfect use of the limb.
Death,	From operation.
Cured,	With perfect use of the limb.
Cured,	With perfect use of the limb.
Recovery,	Amputation; complication; severe phlegmonoid erysipelas.
Cured,	With perfect use of the limb.
Cured,	With perfect use of the limb.
Cured,	With perfect use of the limb.
Recovery,	Amputation.
Death,	Pyemia.
Cured,	With perfect use of the limb.
Recovery,	Amputation; complication; hospital gangrene, &c.
Cured,	With perfect use of the limb.
Death,	Complication; extensive bed-sores.
Relieved,	Operation imperfect; only partial excision.
Cured,	With perfect use of the limb; walking in thirteen weeks.
Cured,	With perfect use of the limb.
Cured,	With perfect use of the limb.
Cured,	With perfect use of the limb.
Recovery,	Amputation.
Death,	Lived for five months after, free from the excruciating pain; died of organic disease.
Death,	Imperfect operation; only partial excision.
Recovering,	With a useful limb.
Cured,	With perfect use of the limb.
Death,	Excessive hemorrhage; death on fourth day.
Death,	Phlebitis; pleuritic inflammation and vomicæ in lungs.
Death,	Amputation.
Recovering,	"Rapidly improving, and will have a useful limb."
Cured,	With perfect use of the limb; union perfect in nine weeks.
Cured,	Bones united by solid medium, and able to bear his weight upon limb; a little more time will perfect it.
Recovery,	Amputation: excision was pressed in this case. Dr. Humphrey did not think it suitable.
Recovering,	Under treatment; health much improved, and anchylosis far advanced.
Recovering,	"With every hopes of a perfectly straight, useful limb."
Recovering.	
Recovering,	Under treatment.
Death,	Completely rallied from the operation, and died suddenly from a slight effort in bed.
Cured,	With perfect use of the limb.
Recovering,	Under treatment.
. . . .	Under treatment.
Recovering,	"At end of five weeks wounds almost healed; health greatly improved."
Recovering,	"Limb quite firm and straight."
Recovering,	"In five weeks very considerable union of the bones; every prospect of speedy use of the limb."
Recovering,	"Limb in good position; straight; general health as good as could be desired."
Recovering,	"Union between the bones becoming firm; wounds nearly healed."
Precarious state,	Appearance of secondary abscess in parotid region.
Recovering,	Union between the bones delayed.
Recovering,	Union between the bones delayed.
Death,	Thirteen days after the operation, delirious.
Recovering,	"The wound is nearly healed, and the limb promises to be a useful one."

when cut through." Whether this applies with equal force to the two bones is questionable, for it is stated afterwards, that the tibia was "especially vascular." Now my reading of this sentence is, that the tibia was not in a sound state, and hence, "even more of the tibia was removed;" and the post-mortem examination, I think, confirms this view, for it is stated, "that the cut end of the femur was coated with a grayish layer of lymph, and its cancellous texture, as far as the line marking the junction with the epiphysis, was filled with a similar deposit, and the shaft was perfectly healthy." But now observe the changes in the diseased bone: "The cut end of the tibia was excavated by caries, and its shaft for three or four inches was extremely carious and infiltrated with pus." Surely such ravages of disease were not brought about within the few days between the operation and the patient's death. I have no doubt that the excitation produced by the *division* of diseased bone may be looked upon as one of the causes giving rise to capillary phlebitis, purulent infiltration, and blood-poisoning.

The third fatal case, No. xv., was operated on by Mr. Holt. The patient was greatly emaciated; "on the eighth day she complained of soreness over the sacrum, and although immediately placed upon the water-bed, the sore continued to extend, and she died on the eighteenth day." In the treatment of fractures with the long splint, I have frequently found this annoying symptom setting in early, but have never failed in checking it, when the patient was under 60, by the judicious adjustment of perforated pillows (far better than any water-bed), a strong solution of nitrate of silver to the back, &c., and the free administration of stimulants. Had this case occurred with me, and that all else failed in arresting the ulceration, I should not have hesitated in placing the patient in the sitting posture, with the limb steadily fixed in the box which I have recommended on such occasions. The post-mortem revealed this fact:—"The extremities of the bones were covered with lymph, with a degree of vascularity which augured well for recovery." Now it may, I think, be fairly inferred, had the sore upon the sacrum been removed from pressure, a like repair would have been extended to it.

The fourth fatal case, No. xxii., was operated on by Mr. Bowman; but death cannot strictly be ascribed to the special operation. Through the politeness of Mr. Bowman, I obtained the following valuable information, December 10, 1856:—"The lady, whose case I briefly related to you before, died between four and five months after the operation. Tubercular disease in the lungs and kidney, and a large gall-stone which lay in an abscess in the situation of the gall-bladder, were found. There was no union of the ends of the bones, but large sinuses about the part. The veins of the lower extremities, and even the iliac veins, were impacted with fibrinous clots; but there were no purulent deposits, so called." In the report of the case it is stated that the operation afforded an exemption from pain for three months: as much as possibly could have been expected from any operative interference, when such extensive disease of vital organs prevailed.

The fifth fatal case, No. xxiii., was operated on by Mr. Cutler. In my mind this case does not fairly come within the category of those of excision of the knee at all. An imperfect operation was accomplished; the diseased cartilaginous surface of one bone removed, while the other was permitted to remain. True, it is stated that the small spot of caries on the tibia was gouged out. But this is not enough, according to my views, for the perfection of the operation of excision of the knee-joint. I contend, if the articulating surface of one bone be taken away, that of the other must likewise be removed, whether diseased or healthy. The thinnest slice will suffice, so that the cut osseous surfaces may lie in contact, and ultimately be grown into each other. The polished cartilage will not unite with the cut bone—no strong, permanent union will cement them together, and Nature, if she has sufficient power, will struggle to remove the cartilage, and then bring about union; but during these efforts profuse discharge is kept up; the tendency to capillary phlebitis evoked, sinuses are formed, and ultimately the patient, worn out with a partially developed hectic, sinks and dies.

The sixth fatal case, No. xxvi., was operated on by Mr. Moore. It is not recorded whether the end of the femur was removed or not; but it is stated:—" In the evening it was found necessary to open the parts again, on account of hemorrhage; all the sutures were removed, and the parts left exposed for the night." The irritation created by the disturbance and exposure of the extensive cut parts, no doubt, contributed to the manifestation of the great constitutional excitement which carried off the patient on the fourth day.

The seventh fatal case, No. xxvii., was operated on by Mr. Fergusson, and died, on the fifteenth day, of extensive phlebitis, pleuritis, and vomicæ.

The eighth fatal case, No. xxviii., was operated on by Mr. Windsor. It is stated that about "three hours" after the operation "hemorrhage to so great an extent took place, that he [the patient] became almost pulseless." From this period constitutional disturbance was gradually developed, persistent vomiting, rapid pulse, &c. Again, we find a small sore formed over the sacrum, and a piece of bone, apparently part of the internal condyle, projected through the granulations, and appeared dead. On the 11th of October the limb was amputated, and on the 16th the patient died. I attribute the entire failure of this case to the prostrating effects of the fearful hemorrhage which was permitted to take place immediately after the operation.

The ninth fatal case, No. XXXVII., was operated on by Mr. Brace. I have obtained, through the kindness of this gentleman, the following interesting particulars:—" The man rallied immediately and completely from the effects of the chloroform; he slept well, and made a good breakfast on the following morning; he fainted, and died, after making some slight efforts to pass water, twenty-four hours after the operation." "Post-mortem examination revealed no disease of the heart or lungs; but the pleuræ were closely adherent to the ribs on either side, the cavity being apparently obliterated by *fat;* there were also large depositions of fat in the omentum and abdominal walls; but in no other part of his body." Mr. Brace continues: —" I cannot attribute his death to the special operation; had any other capital operation been performed, I believe he would have died the same way from syncope; could we have suspected his condition, brandy would, I believe, have saved him." I likewise have no doubt that, from the very first, stimulants should have been freely administered here. Mr. Brace concludes:—" This case promised at first so favourably, that to many the result would be discouraging; but I shall have no hesitation in performing the same operation when an opportunity offers."

The tenth fatal case, No. L., was operated on by Mr. Quain:—" From the time of the operation," writes Mr. Quain, " the case went on in all respects well for several days; healthy suppuration was established; but on the 16th of the month an unfavourable change was manifest. Then the wound was dry, suppuration was stopped, and the patient became excited; at a later period, even delirious. He died thirteen days after the operation." I have often seen patients die in a similar way after amputation. The particulars of this case and the post-mortem examination are most interesting, and I feel deeply indebted to Mr. Quain for them. I may here remark, relative to the seton that was used, that it was not necessary; and this was Mr. Quain's opinion afterwards. In his letter he distinctly says:—" The seton was used in consequence of my having known pus to accumulate between the bones, its escape being prevented by a barrier of muscle on each side. But that expedient turned out to be wholly unnecessary, for, with the same view of allowing a free escape for the purulent secretion, I had made the lateral incisions far back, and the result was, that the pus, which was secreted abundantly, was discharged freely at the sides of the limb."

We next come to consider the cases, after excision, requiring amputation. The first case requiring amputation after excision, No. i., was operated on by Professor Pirrie, May 17, 1854. In reply to my inquiries, he informed me, Sept. 24, 1856, that—" Measles were very prevalent at the time, and the boy was attacked, in a very severe form, on the third day after the operation. Hectic fever quickly supervened, and on the 10th of June, twenty-four days after the operation, amputation of the thigh was performed in its lower third. I think it must be ceded in this case, that the very unusual complication which threatened the boy's life militated powerfully against the success of the operation, and to it must be ascribed, in a great measure, the apparent necessity for the removal of the limb. The boy made a rapid recovery, and was dismissed cured, August 18, 1854."

The second case requiring amputation after excision, No. vi., was operated on by Professor Pirrie; excision was performed on the 4th of November, 1854; four days after, the patient was violently attacked by phlegmonous erysipelas. On the 13th of November, nine days after, the thigh was amputated through the lower third, and the patient was dismissed cured on the the 19th of December. Professor Pirrie, writing on the 2nd of October, 1856, in answer to some questions of mine, says:—" The man never had any form of erysipelas before this attack, but there were many bad cases of erysipelas at the time; it commenced in the under part of the leg; purulent collections formed beneath the skin and between the muscles; gangrenous masses of cellular tissue were discharged along with the matter, and sero-purulent infiltration took place into the whole of the cellular tissue of the leg. Coexisting with this extensive suppuration and disorganization of the limb, the extreme exhaustion, and other sources of danger arising from the great irritability of the stomach and bowels, rendered amputation necessary." I shall only remark, and in Mr. Pirrie's words, " measles in one case, and phlegmonous erysipelas in the other, were very unfavourable circumstances."

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The third case requiring amputation after excision, No. x., was operated on by Dr. Keith, March 10, 1855; but recurring abscesses down the leg and up the thigh, with persistent diarrhœa, &c., demanded amputation, which was performed on the 20th of October. He made a most rapid recovery after, and was dismissed in robust health on the 30th of November, 1855. In reference to this case, Dr. Keith, in writing to me, Sept. 30, 1856, says:—"The latest entry in Thompson's case is dated Monday, 30th of June, 1856.:—Presented himself today, looking stout and well, walking on an artificial limb most nimbly." Dr. Keith concludes:—"This is one failure in my hands out of three, but the patient lives, and is in health, and had a chance for his own limb."

The fourth case requiring amputation after excision, No. viii., was operated on by Mr. Birkett. The joint was excised on the 29th of May, and on the sixteenth day after, hospital gangrene attacked the wound; however, by judicious local applications and abundant support and stimuli, in about fourteen days from the commencement of this attack, the wound had assumed a healthy aspect, and the powers of the patient were much improved. On the thirty-eighth day after excision amputation, through the thigh, was performed. On the fifth day after this he had a slight hemorrhage, which was controlled by cold and pressure. For several days after, his condition materially improved. Three weeks after the amputation, he had bleeding again from the stump, which seemed to come from near the bone that was bare; this was controlled, but on the morning of the twentieth day after the amputation, a most profuse bleeding took place; it was found to proceed from the mouth of the femoral artery; the trunk was traced up for about an inch, and ligatured; the patient now seemed reduced to the last extremity, and the stump of the femur projected between the flaps; the ligature came away seven days after its application; the cicatrization advanced favourably. From this time his health improved rapidly; the stump healed, except around the projecting bone, and he was able to walk about on crutches. On the 30th of August the necrosed end of the stump came away, and the next day the man left the hospital.

There are some points in the management of this case to which I cannot assent; from the very first the limb, according to my views, was not put under proper restraint; it was not placed in an apparatus which should protect the divided bones from the slightest motion; it was clear that the "back splint and sandbags" were inefficient, for on the "third day the dressings and bed were changed, and a pillow and sandbags substituted for the splint, which was thought to hurt him, but he could not do without the splint, which was again applied."

The repeated necessity for adjusting these means proves their inefficiency. Again, when the gangrene ceased, the wound had assumed a healthy aspect, and the powers of the patient were much improved; it is stated, " it was extremely difficult to retain the ends of the bones in proper relation to each other, and the end of the tibia was drawn backwards behind that of the femur." Why was all this? Simply because the bones were not restrained from the very first; such hideous deformity should never have occurred; when such an unsightly object presented, I can conceive a surgeon supposing " the powers of the patient scarcely sufficient to carry him through the repair of the part," and also join in the belief " that it did not appear probable, even if the part was healed, that the limb could even be a useful one." But I repeat that the limb, which was so easily restrained immediately after the operation, when " the ends of the femur and tibia came together in very good apposition, and the cut surface of the patella rested on them in front, should never have been suffered to distort itself, as above stated; and if so unfortunate an occurrence had been guarded against, there is no reason why, at this time, the improved state of the patient should not have been continued, and the union of the divided bones accomplished. The soft parts proved an abundant vitality, they liberated themselves, and cast off the sloughs around; and it may be presumed, I think, that the general health, which at this time bore up after a severe amputation; considerable hemorrhage three weeks after; another violent effusion of blood in a few days, requiring a tedious operation to secure the main artery above the stump; finally, the elimination of a large piece of necrosed bone; would have been competent to the full reparation of the part after the first operation.

The fifth case, requiring amputation after excision, No. xxi., was operated on by Mr. Stanley, on the 29th March, 1856. I conscientiously ask any impartial judge whether the after treatment was at all likely to insure success. In the report of the case it is stated:—" The patient was shifted every few days, and, consequently, never being firmly fixed, the flexor muscles gradually drew the leg behind the thigh, although the tendons did not appear tight; of course the original wound gaped, and became very extensive." Here, then, we have hideous deformity created, just as in Mr. Birkett's case. We read that, " on the 5th of May her condition was as follows; it appears that from some peculiar condition of the system, some nervous irritability, the girl is not going on well. The leg is in a semiflexed position, laying on its outer side, with a large, raw, ulcerated surface over the seat of the wound, discharging a great quantity of matter. The limb, moreover, is very tender; she can scarcely bear it to be touched, much less moved." It requires no great sagacity to divine upon what cause the "nervous irritability" depended; there need be no fanciful "peculiar condition of the system" looked for. The after part of the paragraph, describing the unrestrained and distorted limb, will account for the constitutional disturbance, aggravated pain, and profuse discharge, requiring the amputation of the limb on the 10th of May. The report says:—"After a few days her health began to improve." After the removal of such a misshapen, irritable mass, the favourable result might be conjectured:—"In the early part of August she left the hospital well."

The sixth case requiring amputation after excision, No. xxviii., was operated on by Mr. Windsor, May 29, 1856. About three hours after, a most violent bleeding took place. "The effect of the hemorrhage, which commenced a few hours after the operation, was so severe," writes Mr. Windsor, "as to make me fear for the immediate death of the patient." This case affords another instance of the ill effects of hemorrhage after excision. No doubt, considerable depression followed, manifested by the tendency to bed-sore, &c. I quite agree with Mr. Windsor, "that all cases after operation should be closely watched." If a competent assistant had been placed beside the bed in this case, that hemorrhage which threatened "the immediate death of the patient" would have been prevented, and controlled until effectual efforts for staying it were put in force. I do not think the treatment by irrigation with cold water very applicable to those cases. It is apt to chill; to prolong the shock, which in many instances, after severe operation, continues for several hours—aye, and in some cases requiring quantities of stimulants for days to prevent the prostration due unto it. Again, I think it acts injuriously, by limiting that active inflammation which is essential to the commencement of repair. In most instances, I believe, failure in the union of the parts may be ascribed rather to a want of healthy inflammation, than to an excess of it. The great controlling power to be depended upon, in regulating, as it were, the inflammatory process in cases of this kind, I believe to be the steady maintenance of the limb, accurately and equally supported, in the straight position; if such management be duly enforced, irritation is quickly subdued, the tendency to engorgement and congestion of the parts divided is diminished or checked, and the inflammatory process rises no higher than that which the surgeon frequently excites for salutary purposes. On the 9th of October a piece of dead bone, supposed to be the internal condyle which had projected through the granulations a few days before, appeared unchanged in the wound; but the patient became thinner, weaker; his cough increased. For these reasons his limb was amputated October 11, and he died on the 16th. A very marked want of vitality stamped this secondary operation, for it is stated, "on examining the stump, edges ununited, its surface covered with a blackish, sanious discharge. No examination of the body allowed."

The seventh case requiring amputation after excision, No. xxxii., was operated on by Mr. Humphrey, July 18, 1856. Now the history of this case, and the after dissection of the limb, which Mr. Humphrey politely communicated to me in a letter, dated November 12, 1856, are most valuable and interesting. Mr. Humphrey did not think it a good case for excision, owing to the wide-spread disease of the synovial membrane, and would have performed amputation, but the boy resisted, and solicited for the former. At first the case went on very favourably, but in a short time "the lad's health began to fail, profuse suppuration set in; in the early part of October amputation was proposed, to which the boy would not assent until the 4th of November, when the limb was removed at the junction of the middle and lower thirds of the thigh." The following is a history of the dissection, and Mr. Humphrey's remarks on the cause of failure:—"Dissecting the parts, I found still remains of the thickened and diseased synovial membrane around the extremities of the bones. Indeed, the sinuses, in each direction, led to some of this, and I believe its presence to have been, in great measure, the cause of the continuance of the suppuration, and of the unfavourable progress of the case. At one place, close to a portion of this diseased membrane, the edge of the femur was, to a small extent, bare and rough." Had the child's health borne up a little longer, I think success would have crowned Mr. Humphrey's efforts in this case also, for mark the extent to which repair had gone:—"The cut surfaces of the bones were covered by a softish, granulating-like structure, extending between them and uniting them, except near their circumference, where they were, in many places, joined by tougher fibrous structure. At one point only was there any formation of new bone, and this was insufficient to bridge over the interval between the bones." At the time Mr. Humphrey wrote, the boy was rapidly recovering after the amputation.

We turn now from the dark side of the picture, to investigate those cases which have been most successfully cured. By repeated correspondence I have obtained the most faithful statistics in reference to them, even up to the time at which I write.

With regard to the case, No. ii., successfully operated on by Mr. Brotherston, May 19, 1854, I received from him the following account:—

"*Alloa, November* 25, 1856.

"I was at Clackmannan to-day, and called for the boy Strong, who I found at school, but had him sent for. I had an opportunity of seeing him running down the hill to the house, without any assistance, and without the use of a crutch or stick. I will, as you wish, give you the exact state of the leg at the present time. The femur and tibia are firmly anchylosed, and the patella is immovable at the juncture of the bones; the leg is not quite straight; there is a little enlargement of the inner condyle of the femur, which makes the leg a little bent at this point; there is a small ulceration on the front of the knee, on the line of incision, and another upon the outside of the thigh. The leg is, however, strong, and most useful; he can walk and run with freedom, and can stand on it alone, and hop. The boy is of a highly scrofulous constitution, and I think it likely that the ulceration will entirely heal as he gets stronger."

Mr. Brotherston had many difficulties to encounter in the management of this case; he thus writes:—

"When you consider the great obstacles I had to overcome in the treatment of this case, you will wonder how I succeeded so well. The boy lived with his father, a collier, with a large family, all occupying one room. In this case the limb was one inch and a half shorter than its fellow."

The next successful case, No. iv., was operated on by Mr. Landsdown, Sept. 26, 1854. A great many untoward circumtances occurred to delay recovery, as already stated; but, by Mr. Landsdown's management, the limb was brought down from its contracted position; so that in answering my inquiry, he writes, on the 13th of December, 1856:—"She walks about in the house without any assistance, but out of doors she uses one crutch. The leg is two and a half inches shorter than the other."

In reference to the first case, No. v., successfully operated on by Mr. Humphrey, October 27, 1854, he writes to me thus:—

"*Cambridge, Nov.* 22, 1856.

"Eliza Hobbs, the young woman who underwent the operation of excision of the knee-joint, came over to Cambridge, and I have seen her to-day. The bones are firmly united, and bear the weight of the body well; so that she is able to walk without either crutch or stick, the only defect being, that the limb is one inch and a half shorter than the other, and stiff from the hip to the ankle. I am very glad to be able to send you so satisfactory an account of the operation. The wound has long been soundly healed."

The next case, No. vii., successfully operated on by Mr. Hughes, November 16, 1854, is described by this gentleman in a letter with which he favoured me, and dated, Stafford, November 15, 1856. "I received your first note of inquiry, and delayed to answer it till I could conveniently visit Anne Turner, the subject of the operation, who resides on the borders of the county. I have this week been to her residence to make the needful inquiries, and am obliged, she being from home, to content myself with the testimony of her mother. I learn that the sinuses did not permanently close until last April. She has, during the last twelve months, had a very useful limb, and has declared her intention to go out to service. She has often walked to church and back, between three and four miles, and once the same distance, without an interval of rest, and without much inconvenience. The shortening of the limb is between an inch and a half and two inches."

Mr. Henry Smith has kindly informed me as to the present condition of the boy successfully operated on by Mr. Fergusson, December 16, 1856—No. viii. "October 1, 1856. I have frequently seen him walk into the theatre of King's College Hospital when Mr. Fergusson wished to show him to his pupils. In this case an inch and a half of bone was removed."

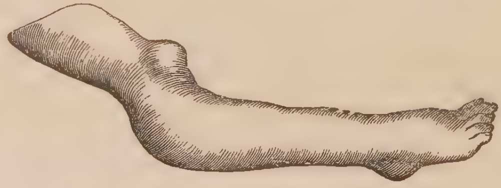
It is with great pleasure I refer to the case, No. ix., successfully operated on by Mr. Brotherston, January 12, 1855. He has favoured me with the following history as to the boy's present state:—

"*Alloa, November* 13, 1856.

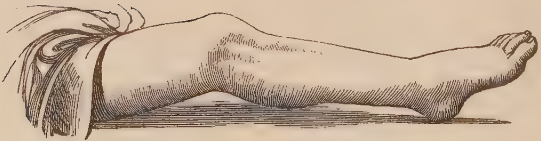
"The present condition of the leg, in which I performed excision of the knee-joint on January 12, 1855, is as follows:—The leg continues quite well to this date; the tibia and femur are firmly anchylosed, and the patella movable, but a little drawn up. All ulceration has perfectly healed, and he can walk without the support of a crutch. The leg is an inch shorter than its fellow, but is evidently keeping pace in growth with it and the rest of the body. The lad has grown much since the operation, and has improved greatly in general health. He is sitting by me at present, while I am writing this note."

Case No. xii., successfully operated on by Mr. Humphrey, May 4, 1856. In a letter which I received from that gentleman, dated November 12, 1856, he states:—"With regard to the man, aged 47, some friends who saw him in the spring of the year told me that he could walk very well with a stick."

I refer, with the greatest pleasure, to the case, No. xiv., successfully operated on by Mr. Jones, August 20, 1855:—"At the expiration of ten days there was an evident amelioration in the little patient's health; five weeks after the operation she was able to raise the whole limb; and three weeks after this went about the wards on crutches; scarcely three months elapsed when she moved about without any appliances to the knee." "For some time past," continues Mr. Jones (writing in June, 1856), "the child has been in perfect health, strong and stout, and can walk quickly about with her little companions." This case affords such an admirable illustration of the powers of conservative surgery, when directed by an able surgeon, that it is a pleasant and instructive thing to contemplate and dwell upon the great change, as represented in the annexed woodcuts of the limb, taken before and after operation.



Before the operation.



After the operation.

In reference to this case I shall just insert the impression made upon Mr. H. Smith, of London, by it. In writing to me from Jersey, October 3, 1856:—"I was at the hospital here, this morning, and I saw the case where Mr. Jones took out the knee-joint, and at the same time removed almost the entire tibia. It really is a splendid case. The union of the knee is perfect; the tibia has been restored, and the little girl has most excellent use of her limb; runs about famously. It is by far the best case I have seen, considering the amount of disease taken away."

Case xvi., operated on by Mr. Statham, in September, 1855, affords an instructive lesson, too. If all the badly managed cases in surgery were collected together, they would constitute, probably, one of the most valuable books that the surgeon could lay his hand on or consult. In the present instance perfect excision of the joint was not accomplished, and, therefore, the case does not properly belong to this category; but from the history of it at the time of operation, I have no doubt that it should have been so,—in other words, only a part of the diseased bones were taken away. "About two inches of the end of the femur was removed; it was enlarged, softened, and the cartilage absorbed in various distinct spots through its entire thickness, between the two condyles,—the deeper soft parts were in gelatinous gray degeneration. Although the head of the tibia was in primary strumous condition, it was merely gouged to a slight extent, on purpose to see if it could be possible to save it, in our present state of knowledge, without removing it from the body"[a]. The same objections, which I urged in Mr. Cutler's case, apply here with even greater force; for it is admitted that "the head of the tibia was in primary strumous condition." Yet "it was merely gouged to a slight extent," as if to satisfy idle curiosity, "on purpose to see if it could be possible to save it, in our present state of knowledge, without removing it from the body!" It is admitted that the head of the bone was in primary strumous disease: yet it is expected that it shall not resent the gouging and violence offered to it. There can be no second opinion that the articulating surface of the tibia should have been sawn off, diseased or not; but, diseased as it was, even the most sceptical must admit the propriety of the measure. And what is the result of the case? It is said "the patient went out some months ago; her health good; a fistula leading to the joint; *the head of the tibia and soft parts over it in strumous condition.*" And what view *now* does Mr. Statham take of the case? Why, this:—"I believe that the head of the tibia ought still to be excised, and although amputation might be thought of by some surgeons, I am satisfied that a firm joint might be easily obtained by removal of an inch and a half of the tibia." If *now* requisite, and so likely to be productive of permanent benefit, how much more so, when the part was not so extensively diseased, and when the removal of it would have incurred no additional danger, no new and serious operation, such as opening up the extensive articulation again? But let it likewise be remembered, that some importance must be attached to the quantity of bone removed in reference to usefulness of the limb in progression. It is stated that "about two inches of the end of the femur were removed." A thin slice removed from the articulating end of the tibia, at first, would in all likelihood be enough, while *now*, when the disease has progressed, it is supposed that "an inch and a half" would be required: and yet he expresses even a doubt of this quantity being sufficient, in the words, "although amputation might be thought of by some surgeons."

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[a] On Gunshot Fractures and Resections, by Statham.

The case No. XVII., successfully operated on by Mr. Fergusson, February 2, 1856, is most remarkable:—"On May 2, discharged cured; the sinuses are nearly all healed up; the knee is stiff and straight, and the patient is able to bear his weight upon it when walking, thirteen weeks after the operation." "On May 31, the patient came to show himself; he is able to walk without crutches, having the sole of his boot a little thickened." Mr. Jones, of Jersey, in writing to me recently, alludes to this case thus:—"I saw one of Fergusson's cases, a most splendid specimen; the youth walking about almost as if nothing had happened."

Cases No. XVIII. and XXX., successfully operated on by Mr. Erichsen, the former on February 6, 1856, and the latter on July 2, 1856, made most rapid recoveries. In the first instance, "the man was walking about the ward on crutches within three months, his general health greatly improved, and contented and cheerful." In the second, "the boy had not one bad symptom, and on September 3, nine weeks after the operation, he was going about the ward on crutches. The joint was firmly anchylosed, and the wounds healed; his recovery is perfect." In reference to both these cases I have been favoured with the following note from Professor Erichsen:—

"*Welbeck-street, December* 1, 1856.

"MY DEAR SIR,—I have much pleasure in giving you the information you require: both patients are now perfectly well; they walk easily with the aid of a high-heeled shoe, and, in fact, have very useful limbs. I have had no case of excision of the knee since that in July last. That was, perhaps, the most successful of all my cases.

"Believe me to be most sincerely yours,

"JOHN ERICHSEN."

I have recently heard from Mr. Coe, respecting his two cases of successful excision. The first operated on, February 9, 1856, is thus stated to have progressed:—"By the end of the eighth week he was able to move about freely in bed; by the end of the ninth week he could get about the ward on his crutches; before the end of the tenth week he could bear his weight on the affected leg, and use it in going about the ward." And on the 8th of December Mr. Coe tells me:—"I heard a most favourable account of the boy about two weeks since." In reference to the second case, though much complicated, a happy issue is certain, and must be ascribed to the admirable management of the limb. Mr. Coe, in the letter referred to, concludes thus:—"At this moment I may sum up by saying, he promises to make a good recovery; and, if he do so, he will have a perfectly straight, useful limb. I have paid the lad great personal attention, and have succeeded in keeping the bones in excellent position."

Case No. XX., successfully operated on by Mr. Fergusson, March 1, 1856, was dismissed from hospital, twenty-two weeks after the operation, with the wounds healed up.

Case No. XXIV., successfully operated on by Mr. Marett, April 17, 1856, has turned out most favourably. On the 29th of November, the report which I have received through the kindness of Mr. Jones, of Jersey, states—"She is now able to walk with ease, with the help of a person to support her on one side, and the assistance of a stick."

In reference to the first case, No. XXV., successfully operated on by Mr. Price, May 17, 1856, I have received, by letter, the following intelligence:—

"*November* 19, 1856.

"The girl aged 16, whose left knee-joint I removed on the 17th of May of the present year, at the Metropolitan Infirmary for Scrofulous Children, at Margate, has made an admirable recovery. She now possesses very considerable use of her leg, and, with a high heel to her boot, is enabled to walk about, without the aid of stick or crutch; one or two small sinuses still remain open, but they cause little or no inconvenience. Bony union is not, however, quite complete; but as the general health improves, I have but little doubt of it becoming perfect. Surgically speaking, the result has more than realized my most sanguine anticipations."

Case No. XXIX., successfully operated on by Mr. Jones, June 20, 1856, promised to make a most rapid recovery; but repeated attacks of erysipelas delayed this event. I have been thus informed by Mr. Jones, Dec. 5, 1856:—"I am, however, happy to say that she is now recovering rapidly; and, I have no doubt, will get perfectly well, with a useful limb." In this case the amount of bones removed was not quite two-thirds of an inch.

In reference to the third case, No. XXXI., successfully operated on by Mr. Humphrey, July 18, 1856, in the beginning of October the patient left the hospital, "the wounds nearly healed, and the bones united by firm medium, so that he could throw the leg about, and was able to bear some weight upon the limb." In the same letter from which I have taken this extract (dated November 12, 1856), Mr. Humphrey says:—"The progress of the case, after the operation, was certainly better than I anticipated, from the very indifferent state of the patient's health, and the foul character of the ulcer consequent on the bursting of the abscess. Indeed, at the time the operation was performed, I should scarcely have ventured on excision, had he been willing to consent to amputation."

Relative to Mr. Price's second case, No. XXXIII., successfully operated on, July 27, 1856, I have been informed, in a letter dated November 19, 1856, by Mr. Price—"That the child suffered for many weeks from a low irritative fever, which favoured the formation of bed-sores. At the time at which I write, there is evidence of some disease in the upper part of the tibia, but I trust that some further interference may enable me to give him a useful limb; his health has very much improved, and anchylosis has proceeded to some extent."

It is a great pleasure to refer again to Mr. Humphrey's successful efforts. His fifth case, No. XXXVIII., operated on August 31, 1856, has made an admirable recovery. He favoured me with a letter on the 12th of November, 1856, and thus writes:—"The boy, aged 12, I saw very recently, and he could walk very well without any assistance from stick or crutch; the bones of the leg and thigh being firmly united together, and well able to bear the weight of his body."

In reference to the case No. XLI., successfully operated on by Professor Fergusson, October 11, 1856, Mr. Henry Smith has thus written to me, Nov. 18, 1856:—"On paying her a visit, Nov. 16, five weeks after the operation, I found the limb in excellent position, the wounds almost entirely healed, the patient improved in condition, and in good spirits; although still very thin and pale."

On the 3rd of December, 1856, I received the following gratifying intelligence from Mr. Page, relative to the two cases of excision which he recently performed:—"With regard to the girl whose knee-joint I excised on the 15th of October (Case No. xlii.), I have only to say, that the limb is straight, and apparently quite firm; one large sinus only remains; her health is excellent, and she is getting fat; indeed, after the first operation, she has never had a bad symptom." And, as relates to the second case (No. xliv.), operated on October 27, 1856, he mentions:—"No untoward circumstance has occurred since the operation; if an extensive abscess which formed on the the outside of the limb be excepted: the wound is healing; the limb is in good position, being straight; and the general health is now as good as could be desired."

Case No. xliii., successfully operated on by Mr. Price, October 15, 1856, is rapidly recovering. Mr. Price writes to me, Nov. 19:—"Since the operation, the patient has not had a bad symptom; and strange, though but five weeks have elapsed, there is very considerable union of the bones, and a good prospect of a very speedy use of the limb. Relative to the present condition of the cases No. xlv. and xlvii., operated on by Mr. Bowman, he has been polite enough to give me the following statement as to their present condition:—

"*December* 27, 1856.

"The girl operated on in November has gone on without a bad symptom; union between the bones becoming firm; wounds nearly healed; a few small sinuses remaining. The case operated on December 6th has gone on very badly, and the patient is in a most precarious state. A swelling in the parotid region, perhaps secondary abscess, has formed."

In Cases xlviii. and xlix., operated on by Mr. Hey, I have every reason to hope, when the limbs are steadily fixed by nicely fitted leather cases, or some other mechanical appliance, and the patients, when in a sufficiently healthy state, permitted to get up and move about, that consolidation of the parts will gradually be effected. It is important to dwell upon this point, as it may prevent too hasty interference by amputation. In my paper on "Excision of the Elbow and Wrist-Joint, and the Preservative Surgery of the Hand," published in the Dublin Quarterly Journal, November, 1855, I have dwelt, with great stress, upon the certainty of improvement in the condensation of the parts around, and in the vicinity of the excised joint, as time advances. Indeed, this circumstance was strikingly illustrated as regards the knee in many of the foregoing cases, and most remarkably so in Mr. Smith's case, as recorded in the early part of this memoir; but in none so forcibly as in one of Mr. Fergusson's cases, No. xx., the young woman operated on, March 1, 1856. She left the hospital cured; but the limb was not firm. I have received from Mr. Fergusson the gratifying intelligence of its perfect solidity now. In a letter dated January 3, 1857, with which he favoured me, he thus writes:—

"My dear Sir,—This afternoon I learned from one of my dressers who has just been down to Portsmouth, that he had seen one of my cases, a girl on whom I operated ten or twelve months since. She made an excellent recovery; but at the end of four or five months there did not seem the least disposition to the formation of bone. The change of air, however, has been most beneficial; and now the leg is firm, and she walks actively about without any assistance. There is still a small sinus open, but the case is perfect for the length of time.

"Yours, my dear Sir, with great regard,
"Wm. Fergusson."

In my former essay I gave abundant evidence that *the danger of excision of the knee-joint is considerably less than that attending amputation of the thigh;* and stated ample reasons why it should be so. By the mass of evidence just adduced the fact is confirmed.

In my former essay I demonstrated, by numerous examples, that *the after utility and seemliness of the limb* were vastly superior to any artificial substitute, no matter how beautifully contrived. By the mass of evidence just adduced, the fact is confirmed.

In my former essay I forcibly dwelt upon *the necessity of carefully selecting the cases for excision*, and pointed out the prominent features which should influence the surgeon; but I believe the caution has not been applied in every instance. I fear the panting after *eclat* has charmed away some from the stern dictates of judgment; yet I trust this may never be the case—infinite mischief is done by such rashness. Not only is the life of the patient jeopardized by an operation which cannot secure a useful limb for the purposes of life, but the operation itself is brought into disrepute, and open to the sarcastic criticism of those who know but little about it. *Apropos*, my attention has been directed to an "Introductory Lecture" by Mr. Syme, recently published in the Lancet (November 15, 1856), wherein he alludes to this operation, and in the following terms:—"Vehement and persevering efforts have lately been made to force into fashion two operations, which, while bloody and formidable, have the advantage of being so easy in execution, that they may be accomplished by the most inexpert of operators,—I mean excision of the knee-joint, and removal of the head of the thigh-bone, for disease of the hip-joint." We shall examine into Mr. Syme's assertions as regards the first of these operations, and see whether they contain more truth than is usually ascribed to his statements. All capital operations are formidable: lithotomy; operations for hernia; excision of part or the entire of the upper or lower jaw; securing the main arteries for aneurism; the removal of large portions of the body by amputation, are all formidable operations, yet surgeons do not reject or shrink from them. Excision of the hip, excision of the elbow, excision of the knee, are likewise formidable operations; but the latter I have proved, by lengthened statistics, and even from Mr. Syme's own showing, not to be so dangerous to life as amputation of the thigh; therefore the term 'formidable' must be taken in a restricted sense as applied to excision of the knee, but in its unlimited meaning in reference to amputation of the thigh. Now, as to excision of the knee being, as Mr. Syme elegantly expresses it, a 'bloody' operation, it really is not so. We have the united testimony of Fergusson, Erichsen, Keith, Jones, Smith, Page, Brotherston, Humphrey, and a host of others, that it is not so. But the man who is doubtful about, or ignorant of the anatomy of this region, may easily learn better by reading a few pages of Harrison or Power on the Arteries; or, if he should not wish for anything Irish, let him turn to Cloquet or Quain; or, if he should prefer a Scotch author, Lizars is the man; and he will be informed that there is no artery of volume or size which need be divided in this operation; if any of the normal vessels be enlarged from long-continued disease of the part, they will not be larger, or more difficult to ligature, than those presenting themselves in every-day practice. Mr. Syme's statement as to the "operation being so easy in execution that it may be accomplished by the most inexpert of operators," must be taken with great limitation. I am sure it may be performed with comparative ease in the young subject; but in the adult, when the leg is flexed, and great matting of the parts around the joint has taken place from long-continued disease, the difficulties are very great. Mr. Syme's statement, as applied to the case upon which I operated, is untrue, for I both know and felt the difficulties I encountered in disarticulating the bones, and separating the vessels which were matted to them behind. Though the above sentence was written by Mr. Syme, I think he never intended it to be believed,—he wanted merely to make little of what he signally failed in accomplishing himself. Indeed, the whole tenor of his "Lecture" seems to me a piece of facetious bantering, which I think arrives at its climax when he offers to the class of the University of Edinburgh his "Principles of Surgery as a standard of doctrine for reference." There is one more statement of Mr. Syme's relative to excision of the knee-joint which I wish to refute. He states, in a Lecture published in the Lancet (April 21, 1856):—"So long as the smallest sinus remained open, the limb would be no use for support of the body." In many of the foregoing cases will be found abundant proof to the contrary.

In reference to Mr. Syme's views about the hip-joint, the facility with which it may be excised, its being a "bloody operation," or the propriety of the measure, &c., we cannot enter into these questions here; but I have the greatest possible pleasure in referring the learned gentleman to a source from which he will derive information on every point, and that from one of the first surgeons in Europe. I allude to Mr. Fergusson, who has published a most comprehensive and valuable Lecture "On Hip Disease," in the Lancet, April 7, 1849.

In my former essay I proved, by several instances, *that the growth of the limb was not checked by excision of the joint in childhood;* and am happy now again to confirm this most important fact. Mr. Keith, the distinguished surgeon of Aberdeen, informs me, by letter dated September 30, 1856:—"I have no fear of young limbs not growing; what should hinder them? John Hay's limb (operated on, November, 1853), *is plump, and growing in length as fast as his sound limb. So is* John Keith's (operated on May, 1854)." I have confirmation of this fact, likewise, from Mr. Page, the eminent surgeon of Carlisle. In a letter, with which he favoured me, dated November 20, 1856, he states:—"When I last saw the youth, on whom I operated four years ago, he was able to walk perfectly, and *the growth of the stiff limb had quite kept pace with that of its fellow.*" Mr. Brotherston, also, corroborates this truth; in writing to me, November 13, 1856, relative to the little boy

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from whom he excised the knee-joint, January 12, 1855, he says:—"The leg is an inch shorter than its fellow, but is evidently *keeping pace in growth with it, and the rest of the body.*

In my former essay I described *the various ways of incising the soft parts*, and the operative methods preferred by different surgeons: exception being taken to that recommended by Mr. Syme, from its perfectly unwarrantable nature.

In my former essay I laid stress upon *the propriety of dividing the bones from behind forwards* by means of a fine saw, which I invented and described. One word in reference to this instrument—it is now used most extensively, and I have been gratified to hear of its efficiency in other hands besides my own, even from some of the first operating surgeons in England.

In my former essay I laid great stress upon *the mode of managing the limb immediately after the operation;* how that it should be placed in the extended position and retained so, in a solid case specially made for the purpose, before the patient was taken from the operating table. The difficulties to be overcome in obtaining this result were likewise considered, and modes prescribed according to the exigency of the case. Even here I have advised the division of the hamstring tendons, and in these words:—"But if this method fails (speaking of the milder mode by traction, &c.), and it will most likely do so in those cases where the leg has been for a length of time flexed upon the thigh, and the muscles have assumed a spastic contraction of a settled character,—here I would most certainly recommend the surgeon to divide the hamstring tendons (in preference to cutting off another piece of the healthy bone); this becomes more imperative when the head of the fibula has not been removed, and the tendon of the biceps interfered with; it is the powerful and spasmodic action of these hamstring muscles, dragging the leg upwards and backwards, that creates, to a great extent, the deformity, by the thrusting of the thigh-bone forwards: *by their division, then*, not only is reduction easily secured, but all tendency to after-displacement checked." This paragraph, I think, anticipates by more than a year *one* of Mr. Hutchinson's Two Suggestions respecting Excision of the Knee-Joint[a]. And I think my directions have likewise forestalled the *second*—"Making an opening in the popliteal space." After enumerating various methods of operation, I continue:—"By incisions planned after either, the joint can be very readily reached and exposed; I conceive that in the selection of any, *the wound must extend far back to allow of the free discharge of matter;* and the case to be operated on must not altogether be lost sight of, as some peculiarity may require special consideration." Now I consider my directions far more efficient than "an opening made in the popliteal space" could by possibility be, and simply for these reasons—the "opening" could not, with safety, be made in towards the mesial line, owing to the course of the vessels; and even if it was effected to either side of them, owing to the tension of the soft parts behind, from the straightened position of the member, the edges of the opening would be approximated, and, therefore, matter would not drain off. No, I object to the space being opened behind, or anything that could favour the secretions from the cut surfaces in that direction; if the limb be steadily supported behind, and firmly fixed in the box with the anterior splint arranged as I have directed, and the footboard sustaining the leg at a right angle, there will be no pouching posteriorly, and the lateral incision, or the cornua of the semicircular one, placed well behind, will be far more effective in every way; through these, secretions can freely escape, and be readily soaked up with a bit of sponge, so that the pads behind shall not be soiled, or rendered irritant. By attendance to many apparently minor details of this kind alone, can the quietude and repose of the limb be maintained undisturbed for days, a condition which I would insist upon in every instance, and by the observance of which the issue of the case will be most materially influenced.

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[a] Two Suggestions respecting Excision of the Knee-Joint, by Jonathan Hutchinson, Esq., Surgeon to the Metropolitan Free Hospital.—Medical Times and Gazette, March 15, 1856.

I do not believe one word of the "impossibility" of placing the limb in the straight position at once, and retaining it so; it can be done if the surgeon is up to his work; and this first adjustment can be made without any pain to the patient, as chloroform annihilates sensibility. I cannot find words to enforce, with the power I desire, the importance of this measure. Amongst the foregoing cases there are lamentable instances where it was not adhered to, and which, I trust, will appeal forcibly to the mind of every thinking man. Independent of the advantages of steadying the cut surfaces—the prevention of the divided bones from irritating the surrounding tender parts, the subjugation of all spasm, the limiting of the inflammation to the bounds only necessary for repair—we have still another great benefit accruing from "*putting up the limb at once*," namely, the mind of the patient is at rest, that protective watchfulness over it is removed, and which probably, prior to the operation, had caused nights of restlessness and want of sleep.

The same apprehensiveness when the bones are divided will remain, aye, be increased, if the limb be not immediately fixed in the straight position; but if the control of the patient over the part be checked, he feels confident in the security; repose quickly follows, and sleep is generally induced; if not, opiates will act more certainly, pain being subdued.

Excision of the knee-joint has been objected to by some, owing to the tediousness of the convalescence. I endeavoured to meet this objection in my former essay, and I adduce in the present paper some instances of very rapid recovery,—cases treated by Fergusson, Erichsen, and others; but while I admit that in some recovery has been retarded, yet I think the ultimate benefit has more than compensated for the delay. On this point I shall just quote a passage from Mr. Erichsen's admirable book on Surgery:—"It has been urged against the excision of the knee-joint, that convalescence is tedious and prolonged, but this argument can, with justice, have but little weight; if a useful limb can be preserved to the patient, it can matter but little if a few additional weeks are devoted to the procedure by which it is maintained"[a]. On this ground, also, I find an objection has been raised to its adoption in military surgery. In the Report of the Crimean Medical and Surgical Society, published in the Medical Times and Gazette for September 13 and 20, 1856, Dr. Macleod makes allusion to excision of the knee-joint, and states:—"The only case of excision of the knee-joint had been performed in the General Hospital in camp. The ball had penetrated the joint, and lodged in the internal condyle; that no symptoms had appeared for ten days; then inflammation had set up, and the operation was performed a week after. When the wound was nearly healed, symptoms of pyemia supervened, and he died six weeks after the operation." "He considered the operation was not adapted for military surgery, from the length of time necessary for recovery." This case, I conceive, affords a very admirable lesson as to how great an amount of repair may be set up and accomplished in the short period of six weeks; for the Report says:—"When the wound was nearly healed, symptoms of pyemia supervened, and he died six weeks after the operation." Now I think it may be presumed, when so much had been accomplished in a few weeks, had not this fatal affection stricken the patient, that perfect recovery would not have been tedious, or restoration prolonged, and, therefore, the observation, "That the operation was not adapted for military surgery from the length of time necessary for recovery," could not be sustained by this case. I am fully alive to all the difficulties which military surgeons frequently have to contend against, and likewise to all the benefits and advantages arising from rapidity of cure in military surgery; but every civil surgeon believes the same to hold good relative to the cases in his hospital; and he looks upon, and estimates the life, and the time, of the industrious artisan, as being in every way as valuable as that of the paid soldier of fortune. No doubt, after gunshot injuries the parts are generally so shattered, that few cases can occur to which the operation of excision would be applicable; but if, as in the case just transcribed, the injury is limited, there can be no reason why the operation should not be successful. Here, as in civil practice, the surgeon must make his choice between amputation and excision, according to the condition of the parts.

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[a] Erichsen's Science and Art of Surgery, p. 516.

Sir George Ballingall, in the "Outlines of Military Surgery," fifth edition, p. 397, writes:—"An amputation above the knee, however, I have long looked upon as a very hazardous operation, from the constitutional disturbance which the removal of so large a portion of the body necessarily involves; and looking to the excision of the knee-joint as likely to involve less of this constitutional disturbance, I could not be thought to discourage it as a primary operation."

Another great question presents itself in reference to this operation, and may be considered under two heads:—

1. *Does an error in diagnosis, as to the suitableness of a case for excision, debar the patient from the likelihood of cure by amputation?* Certainly not. The patient is insensible, and, therefore, suffers no prolonged shock; and if the bones are found extensively diseased, I would say, to the terminations of their expansions, amputation should be performed at once; otherwise, if life be preserved, the limb would only be a useless appendage. Now I shall bring to bear upon this point a very interesting case by Mr. Hutchinson, Surgeon to the Metropolitan Free Hospital[a], and detailed to the Pathological Society of London:—A boy had been subject to chronic disease of the right knee for four years; until within a month of the operation, no abscess had ever broken externally. When placed under Mr. Hutchinson's care, the history was—that for the last

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[a] Published in the Lancet, May 10, 1856.

six months the joint had been getting much worse, and that the boy's health was failing. Believing the case a suitable one, Mr. Hutchinson advised an excision of the joint. In the performance of that operation, the following condition of parts was found:—The articular cartilages were everywhere removed, and the opposed surfaces of bone, except where united by adhesions, were in a state of caries. There was a deep ulcer, extending into the patella, the cavity of which would have contained a filbert. In the left side of the head of the tibia was a cavity, into which, for the depth of half an inch, the first joint of the finger entered easily. The condyles of the femur having been sawn away, two patches of yellowish material, infiltrated into its cancellous tissue, were seen; and also the cavity of an ill-circumscribed collection of pus. A second slice of the bone having been removed, a nearly similar condition of things was still found—a small abscess lined by tough lymph, and capable of holding a small nut, having been opened. It was thus made evident, that unless by shortening the limb to an extent which would make it useless, it would be impracticable to cut away all the diseased bone, and amputation was accordingly decided on and performed. Mr. Hutchinson remarked, that the pathological interest of the specimens consisted in their showing several distinct abscesses in the bone, and in the circumstance that the existence of them had not been rendered probable, by the severe pain usual in such cases. With regard to the operations, he believed that, although it had not been deemed wise to persevere with the excision, *his patient had lost nothing whatever by the attempt made to save his limb.* He had been, throughout its performance, in complete insensibility from chloroform, *and within six hours afterwards was in as good a condition as he could possibly have been after amputation only.*"

Now, as to the second part of the question,—*Is amputation likely to be successful when performed some days after excision, owing to some unfortunate circumstances having arisen?*—the cases in the foregoing report answer in the affirmative. In seven instances amputation of the thigh was performed, and all made rapid recovery, save one. How satisfactory this return as contrasted with the result of the wholesale lopping off of limbs practised in one of the largest hospitals in London,—St. George's Hospital. I extract the following particulars from the Table of Operations performed in that institution, and recently published in the Medical Times and Gazette (October 18, 1856). I have placed them for convenience in the following order:—

Amputation of the Thigh, as recorded from St. George's Hospital, London.

No.	Sex and Age.	Limb amputated, circular or flap.	Why amputated.	Result.
1	M. 38.	Thigh, flap.	Degeneration of the synovial membrane of the knee after synovitis; ulceration of the cartilages, and abscess in the joint.	Died.
2	F. 15.	Thigh, circular.	Abscess in the knee-joint.	Recovered.
3	M. 9.	Thigh, circular.	Strumous disease, and abscess of the knee.	Recovered.
4	M. 27.	Thigh, circular.	Gangrene of the foot, after ligature of the femoral artery for aneurism.	Died.
5	M. 31.	Thigh, circular.	Old disease, and partial anchylosis of the knee, with abscess extending up the thigh.	Died.
6	M. 13.	Thigh, flap.	Strumous disease, and abscess of knee.	Died.
7	M. 16.	Thigh, circular.	Strumous disease of the knee, with ulceration of the cartilage.	Convalescent sixty-two days after.
8	M. 40.	Thigh, circular.	Old disease of the knee-joint, with partial anchylosis, and constant pain on motion.	Recovered.
9	F. 18.	Thigh, flap.	Degeneration of the synovial membrane of the knee, after chronic synovitis; ulceration of the cartilages.	Recovered.
10	M. 24.	Thigh, flap.	Caries and necrosis of the tibia, with abscess in the head of the bone, and distortion of the limb.	Recovered.
11	F. 26.	Thigh, circular.	Abscess in the knee-joint, and ulceration of the cartilages.	Died.
12	M. 18.	Thigh, circular.	Abscess in the knee-joint.	Died.

In this Table twelve cases of amputation of the thigh are recorded, and six of them died; while one of the mutilated six is reported only as convalescent on the sixty-second day. Such a result is very calamitous; and it is painful to look upon this Table, and see how many cases, apparently well adapted for excision, were subjected to the more formidable operation,—amputation,—terminating in death. I may well repeat, there is a wholesale lopping-off of limbs for "abscess" and "ulceration of the cartilages" of the knee-joint exemplified here.

In my former essay I dwelt upon the constitutional management of the patient after excision, and the necessity for a very abundant supply of stimulants and sedatives, proportioned to the age and habits of the person—nutritive diet being given according to the powers of assimilation. I again advert to the enormous quantities of wine and opium which I prescribed myself, and with the best success. One word more, for the safety of the patient—the operating surgeon must not lose sight of the case; to him is intrusted the life of the individual: he should have the deepest interest in its success.

As a stimulus to others for exertion, and as an evidence of what may be achieved by the operation of excision of the knee-joint, I shall state the impression produced upon an impartial judge, the Irish correspondent of the Medical Times and Gazette, upon seeing the man, whose case I have recorded in the early part of this paper, and whom I exhibited at the first meeting, this session, of the Surgical Society of Ireland.

"Mr. Butcher made an exceedingly instructive and interesting communication on the subject of excision of the knee-joint, and illustrated the efficacy of the operation, not only by a series of very beautiful casts, drawings, and preparations, which were laid upon the table, but by the production of a man on whom he had operated three years previously, and whose appearance of rude health, combined with the trifling amount of the deformity left, and of the impairment of his power of locomotion, was the best proof of the complete success of the proceeding to which he had been subjected. The idea of a stiff joint is almost necessarily associated with that of rigid and awkward powers of motion; but in the present instance, it was remarked by all who were favoured with the opportunity of seeing the man who had been operated on, that he had acquired not only a free, but even a graceful, movement of his legs. He jumped upon a chair and down again, walked across the room, and readily took off the laced boot and stocking which he wore; in short, it was difficult to perceive which was the leg from which the knee-joint had been excised, without a close examination, so as to see the deep cicatrix left"[a].

It is with great satisfaction and pride I have received from Mr. Fergusson, the distinguished surgeon of London, whose name is so intimately identified with this subject, and, indeed, with all the improvements of modern surgery, the following letter:—

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[a] Medical Times and Gazette, December 27, 1856, p. 650.

16, *George's-street, Hanover-square,*
December 29, 1856.

"My dear Sir,—I am glad to learn that you are again working at the subject of excision of the knee-joint. It is still full of interest; and if the grave question, as to the propriety of the operation be not already solved, I have every hope that, with your labours, and the exertions of others, we shall have ere long the proper data on which its true character must be finally determined. I shall be anxious to see your statistics, although I think we already have fair evidence, that the operation is probably less fatal than amputation in the thigh. If this is once fully proved, then there can be no doubt that the proceeding must be preferable to amputation, as the natural leg and foot are, with few exceptions, far superior to artificial substitutes.

"The occasional deaths which have occurred after the operation, from the time of the Moreaus to the present day, seem to me no greater objections to this proceeding, than to amputation; and the strongest argument against it seems to be the length of time needful (even in the most satisfactory cases) for perfect recovery. This point requires investigation. Meanwhile, from my experience, I am inclined to think that there will be little force in such an objection. No doubt, the recovery has been very slow in many instances; but the same may be said of amputations. It is well known, that stumps occasionally do not heal for six or twelve months, or even a longer date. Such also is the occasional history of resection of the elbow. Such also seems likely to be the case in certain instances of resection of the knee. I have, however, seen a patient, after this latter operation, stand on his own leg within three months, and within six months walk in a more efficient manner, than I ever saw any one in the same time make use of an artificial limb. The wound is a very difficult one to heal, and, I believe, from what I have heard, that the unfortunate result of some of the cases has arisen from defective after-treatment. When better surgery prevails in this respect, it is probable that we shall have more satisfactory results.

"There are some features in favour of the operation (as I imagine) which have never yet been alluded to, and which I think deserve great attention, viz., the comparatively small amount of hemorrhage; the immunity (comparatively) from secondary hemorrhage, and the comparatively small size of the wound.

"As to hemorrhage, a tourniquet is not required, no main vessel is cut, and the loss of blood from the small vessels around the knee is of little consequence. Certainly, in some instances there has been a formidable oozing within the first six or eight hours (intermediary hemorrhage, as it is often called), but I doubt if any harm has ever arisen from this. In one of my own most successful cases, this happened, but no evil resulted, and the progress of the case was satisfactory in the extreme. The question of secondary hemorrhage I think of great importance; it is an occurrence that could not possibly take place in this operation; the size of the wound I believe to be less than in amputation; possibly the greater extent of osseous surface may modify this view. It does not appear, however, that the end of the tibia is prone to disease after this operation; the end of the femur suffers most frequently, just as is occasionally seen after amputations low down in the thigh.

"If there be any force in the modern dogma regarding amputation, 'the further from the trunk, the safer the operation,' I suppose the rule would hold good as regards resections and wounds generally; if so, a resection of the knee-joint, being farther from the body than an amputation, should with those who hold the above doctrine be a guarantee for the propriety of the proceeding.

"There is one feature in the modern history of this operation which I think deserves special notice, viz., the frequency with which it has been practised within the brief period of a few years. Few of the great operations in surgery have so speedily attracted attention from independent members of the profession; this, doubtless, arises from the feeling of "conservatism" which is abroad, as also from that which first actuated me in reviving it: that it had not been sufficiently tried to afford us the data on which to found an accurate decision as to its advantages or otherwise in comparison with the mutilation of amputation in the thigh.

"With cordial sympathy in the good work in which you are engaged,

"I am, my dear Sir, yours very faithfully,
"WM. FERGUSSON."

I shall now conclude my observations upon excision of the knee-joint, and I trust the propriety of the operation in suitable cases has been fully established in all its bearings. Actuated by the same protective principles of conservatism which I have espoused, I shall append a remarkable example of the powers of operative surgery in saving the knee-joint.

It is not my object in the present communication to dwell upon the various modes of dealing with the cicatrices occurring after burns; the judgment of the surgeon must, more or less, determine the operation applicable to the case. I adduce the exposition in the following embarrassing instance as a good example of what may be effected by extirpation of the morbid cicatrix and implantation of natural structure in lieu of it,—the abnormal, dense, elastic, retractile tissue—the nodular tissue of Delpech.

Hugh Brady, aged 29, was admitted into Mercer's Hospital, December, 1855; he applied on the above date, a wretched sufferer, and described his crippled state to have been occasioned in the following way. Being a servant to a wealthy farmer in the country, he was frequently employed in the feeding and superintending of cattle; on several week-days huge boilers of hot mashes were prepared, and it was this man's business to oversee that the proper temperature was employed and kept up during their formation. While thus engaged, he inadvertently stepped upon the lid of one of the boilers, which turned, and he slipped into the cauldron; most fortunately for him, he seized upon the rim of the vessel, and resolutely secured his grip; thus the lower limbs were alone immersed; in his struggles to draw himself out, his left leg was elevated to the rim, and thus only suffered partially, but no further effort could he make: his strength failed; and he must have relaxed his hold and fallen back, had he not been rescued by a fellow-labourer who heard his piercing shrieks.

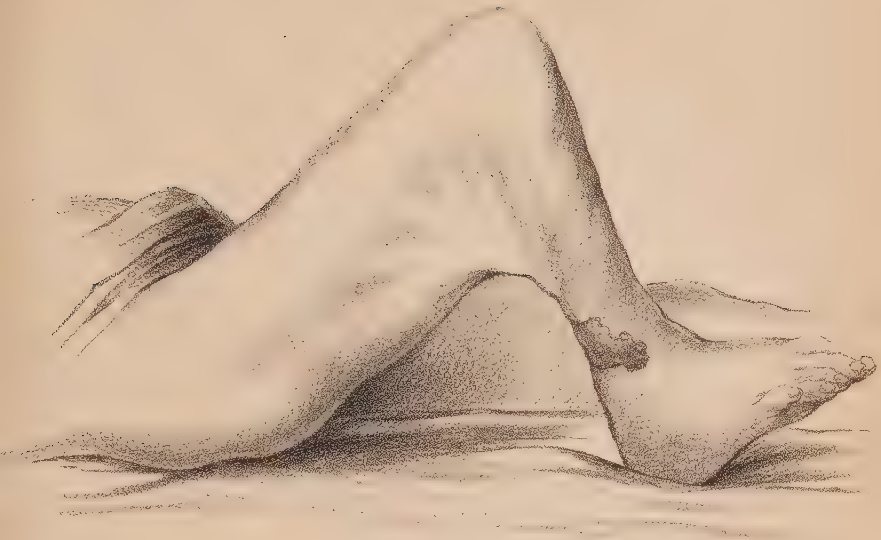
On being lifted out, and stripped of his trowsers, shoes, and stockings, the fearful injury inflicted on the right thigh, leg, and foot was apparent; the skin in "thick flakes" came off, though the greatest gentleness was used in undressing him. For months the creature suffered most severely; and at about the end of a year the limb was cicatrized, but deformed, and bent considerably; this condition continued to increase, and presented the appearance represented in the drawing.

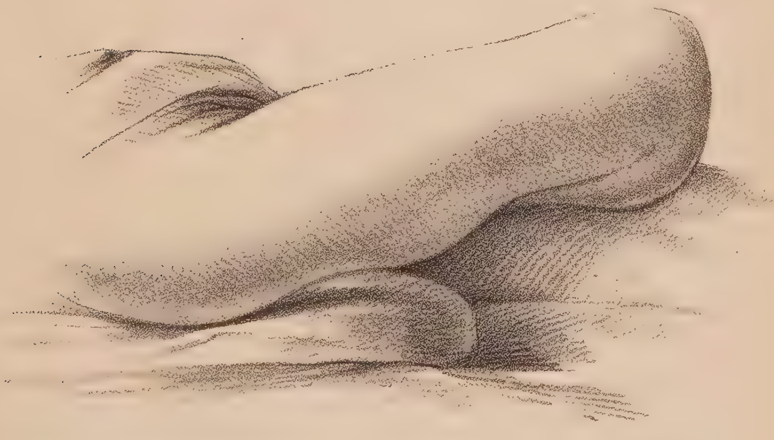
But now, to be a little more minute as to the condition of the parts, when the patient placed himself under my care. The leg was flexed upon the thigh, at somewhat more than a right angle, and belted up by a dense, massive cicatrix, which, while it permitted the angle to be reduced to less than a right angle, effectually resisted even the slightest amount of increase by extension; but an additional deformity was created by the foot being girt up in the extreme of flexion, and rigidly retained so by a similar condensation and matting together of tissues, as that in the greater cicatrix; the leg and foot together presented a most misshapen mass. The greater cicatrix extended from the posterior and upper third of the thigh, commencing a little below the fold of the buttock, to the outer and inferior half of the lower third of the leg, where it terminated in the margin of a large, deep, ulcerated patch, about the size of the palm of the hand, and which never healed from the time of its creation, after the casting off of the sloughs; as a discharging sore, it abundantly afforded a thin, watery secretion; its margins were never healthy—they were irregular, they were inflamed, they were irritable. Now the intractable nature of the ulcer was to be attributed to two causes—the dense matting of the superficial and deep fissures surrounding it, altogether preventing contraction; and secondly, the constant dragging of the expanded cicatrix at its upper margin. By measurement, the depth of the posterior, or great cicatrix, corresponding to the angle of flexion at the knee, was seven inches and a half; its thickness exceeded an inch and three-quarters. On closely examining the structure of this powerful band when put upon the stretch, it was firm, unyielding, dense, with many corded lines easily traceable through it, and hard nodules here and there deposited. On relaxing it by extreme flexion of the leg, all the characters of fibro-elastic were communicated to the trunk; without exception, it was the largest mass I ever saw developed, and borrowed from the surrounding parts after burn or scald. I have used the term "borrowed," and it is most applicable, for the integuments in front of the thigh, leg, and knee, were strained backwards, and compelled to contribute to its formation. In numerous instances I have seen remarkable cicatrices after burns and scalds, remarkable for their size, extent, and distorting influence on neighbouring parts; yet in no instance was the disorganized product so great as in the case I am describing, although, in my private collection, I have specimens where, as the result of burns, an expanded web stretched between the ear and the tip of the shoulder, forming as it were, a partition between the front and back of the neck; in another, where the chin was bound down close to the sternum, with all the hideous deformity of countenance characteristic when located in such a site; in another instance, where the cicatrix extended from the axilla to the lower third of the forearm, bending it at a right angle; and in the same specimen the hand powerfully adducted, even to an acute angle from a second and similar cause, along its ulnar edge; while in another there is exemplified dislocation of the wrist forwards, and of the first phalanx of the thumb from its socket, from the same cause: the slow, gradual, yet progressive contractile power inherent in the product, as reparative after severe burns.

In the case under consideration, the integuments on the forepart of the leg were in a healthy condition, as low down even as the upper margin of the ulcer; while on the corresponding surface behind they were implicated in the massive cicatrix, all save a small portion on the inner side, and corresponding to the upper part of the calf, the outer two-thirds of the calf, its muscular structure, and all seemed to be embedded and fused into the cicatrix. The integuments around the lower third of the leg, or below the confines of the upper margin of the ulcer, were strained over, and matted to the bones; while the foot, distorted, as already noticed, beyond its natural angle of flexion, was fixed so, and spoiled in shape; the arch was filled up, and all the sulci and hollows around, by deposited fibrine, with the integuments greatly thickened and spoiled; in fact, that part of the leg corresponding to the ulcer, and inferior to it, seemed, in its entire circumference, as if it had been tightly strangled. This appearance was very remarkable on looking at the limb in profile, owing to the additional volume created by the cicatrix above, and the thickened, shapeless mass presented by the foot below (see Plate I.)

Before proceeding farther, I may here mention, that the left limb did not escape injury altogether, for though only a short time immersed in the scalding fluid, it too suffered, even deeply, but only in isolated parts, and not to any extent. Small cicatrices were observable upon it; deep, sunken patches on the thigh, calf, front of the leg, &c., varying from the size of a half-crown piece to that of the palm of the hand; yet the tendons above, below, and around the joints were not implicated, and the limb retained its functions. By the assistance of crutches the young man was enabled to move about; but the amount of exertion requisite was followed by great and prostrating fatigue, with constantly recurring, inflamed margins around the cicatrices of the left limb. In this way he struggled on for months, until life became absolutely irksome, and he determined to have the contracted leg removed. When he presented himself to me, such were his feelings. I fully sympathized with him, and gave his case the most earnest consideration. There were many features of great interest in it; there were many points to be weighed and balanced before coming to any hasty conclusion, or executing an operation before a large class of students, that might not be in accordance with the strict rules of preservative surgery; an act which, if consummated, independent of the bad example set forth to

Plate I. Vol. XXIII. Pa





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others, would indeed, upon reflection, prove to me most humiliating.

First, then, I decided on not meddling with the cicatrix, by way of liberating the knee-joint, and for these reasons, the ankle-joint was irremediably distorted and spoiled; its surrounding tendons and ligaments were all matted together; into every interstice lymph seemed to have been poured, and the entire was disorganized and unfitted for its functions. Again, the integument above the ankle was strained around and bound to the bone, together with the tendo Achillis, while on the outside and in front was a part lost, ulcerated, incapable of lessening itself, deprived of the power to cicatrize. For here, even the division of the cicatrix attached to its upper edge could not set it free. Neither could that beautiful operation, recommended by Mr. Gay, liberate its margins, for the reasons assigned.

There could be no second opinion as to the propriety of amputation in this case, but the difficulty which presented was to save the knee-joint, at the same time to plan such an operation that the cicatrix should not exert its traction on the stump, either by retarding its healing or keeping it open altogether, and thus proving a source of perpetual irritation.

Erysipelas several times attacked the sore on this patient's leg, and he suffered severely on more than two occasions. A short time after his coming under my charge, he had a sharp attack, which lasted several days, and it was not until the 8th of February that I dared to remove the limb. Other circumstances, too, conspired towards this delay. The man was wearied and prostrated after a long journey from the country; in a word, his whole system required repose and nourishment.

On the 8th of February I performed the following operation:—The patient being placed recumbent on the operation table, he was quickly brought under the influence of chloroform. When so, the circulation in the limb was controlled by pressure made upon the femoral artery where it passed over the pubis; and here I may state, that it was a difficult matter to command the vessel, owing to the flexed knee, for the foot rested upon the table and was so steadied; thus the thigh was inclined upwards; and the groin sunken. The limb being fixed in this way, and the arterial supply cut off, standing upon the right side of the patient, I commenced an incision over the inner edge of the tibia about two inches below the articulation, and carried it rapidly downwards to the inferior third of the leg, and swept the knife in a semicircular manner outwards and upwards, avoiding the ulcerated patch, in a line over the forepart of the fibula, and terminating a little below its head, and opposite to where the knife was first laid on. Thus an extensive flap, of somewhat a triangular form, was marked out, from eight to nine inches in length, and three and a half at its widest part, extending over the entire forepart of the leg; it was quickly dissected up from below, its narrowest part upwards, to the base, and great care was taken to remove with it a considerable portion of muscular fibres from between the bones. This was done with a double object, first to insure the vitality of the flap, and secondly, to fill up the space into which it was to be ingrafted. The knife then was applied at the point where the external incision terminated, and was carried freely upwards along the outer margin of the cicatrix in the thigh, to where it commenced near the buttock: in a similar way the knife was brought back along the inner sides of the cicatrix, finishing opposite the articulation, and in a line mesially about a third from the internal wall of the joint. This long cicatrix, then, being liberated at the sides, was dissected out, together with the fascia, from the back of the thigh. So much being effected, the hand and knife were passed beneath the limb, and the edge of the instrument applied at the beginning of the internal incision for the anterior flap; from this it was carried with a slight degree of obliquity downwards and backwards through the integuments covering the healthy piece of calf; the integuments below the incision were then dissected down a short distance, together with the cicatrix, from the upper part of the leg, and next a catling was thrust from the outside, behind and close to the bones, so as to separate the healthy muscular fibres, and sever them about two inches below the division of the integument. Thus a muscular covering was secured for the ends of the bones, and we shall presently see how well it was adapted to that end. All remaining fibres attached to the tibia and fibula being divided, I rapidly cut through the tibia and fibula, about two inches below the tuberosity of the former; the section, being made with my own saw, was intentionally curved, so that the sharp margins of the bones should not irritate the tender flaps. The only artery that yielded blood was the posterior tibial; it was ligatured, and shortly after the patient was removed to bed, and the limb supported on pillows. Could I have secured the main arteries, I would far have preferred at once dressing the wound, so that the long anterior flap should not be lowered in temperature, and thereby its vitality imperilled. I did, however, the next best thing, and wrapped the entire limb in a sheet of cotton wadding, some linen being interposed, and left it so, a pupil remaining beside the bed to watch for and arrest any bleeding that might take place. After a lapse of three hours I proceeded to dress the wound; reaction was fully established, and all the cut parts warm. The sensitiveness of the patient was so exalted, that I had recourse to chloroform again; and then had no difficulty in adjusting the parts. On removing a few clots from the flaps, rapid bleeding ensued, and was easily recognised as coming from the anterior tibial artery, and two large muscular branches in the internal flaps; they were, however, quickly secured, and, therefore, with but little loss. The adjustment of the parts now proved very perfect and satisfactory; the internal flap formed an admirable covering for the bones, which were retained in a flexed state, while the anterior long flap, when turned back, lay in a direct line over that portion of the internal flap covering the bones, and without tightness, and also fitted up along the back of the thigh into the extensive space from which the cicatrix was removed; and it was pleasing to see how ample it was for the purpose. Numerous points of the interrupted suture were employed to hold these parts in contact, and, when completed, nothing could possibly look more perfect; adhesive straps and bandage, lightly put on, were also had recourse to, so as to afford a gentle, equable support throughout the entire opposed surfaces, at the same time, with due caution not to interfere with the tardy and struggling circulation, especially in the transferred part behind.

Immediately before the operation, the patient had some wine, and after, he was liberally supplied with it; and when the dressing was completed, he got a full opiate.

9 p.m. Feels comfortable; the opiate to be repeated.

Feb. 9th. Had a fair amount of sleep throughout the night, being only disturbed on two or three occasions by twitchings in the stump. He, however, lies a good deal prostrated. Pulse 112; tongue bluish and flabby, together with some slight nausea; urine passed in abundance; ordered saline effervescing draughts, and small doses of a mixture containing hydrocyanic acid and morphia; an increased quantity of wine.

5 p. m. Has suffered but little pain, and almost free from nausea; to repeat the anodyne draught at bed-time.

10th. Says he feels much better, had a good night and quiet sleep; no startings or headach; pulse 104, soft. Took some toast and tea for breakfast, with appetite; to have small quantities of beef-tea, wine, and bread, frequently during the day; the stump looks well; no more heat or inflammation than requisite for union. The flaps, throughout their entire extent, preserve ample vitality; lint, soaked in spirit lotion, laid over the entire surface now: to continue the mixture containing hydrocyanic acid and morphia.

12th. Going on most favourably; pulse 100; wound free from all pain; no irritation about it; union has taken place, by first intention, in many parts along its edges, and the posterior flap is grown into the surface above, and consolidated throughout. Some healthy purulent matter can be pressed out from beneath the margins of the internal flap, and in the line of the ligatures. On this day I removed many of the sutures, being no longer required—their office fulfilled—and in a few days later the remainder were taken away. On the 16th, 23rd, 27th, and 29th, the ligatures were cast off; nothing could be more promising than the appearance of the limb. It is unnecessary to continue the report day after day. On the 25th of March the parts were healed, and thoroughly consolidated throughout; and a more perfect or beautiful stump could not be produced (see Plate). I have made a very accurate cast of it, which contrasts remarkably with that of the deformed member, taken before operation. Both are in my private collection, and it will afford me the greatest pleasure to show them to any one interested in such matters.

Shortly after the above date I had a wooden-leg made for this man, properly fitted to the knee, and a more perfectly serviceable limb could not, by the most sanguine, have been expected.

Before I conclude, there is one point that I would specially wish to insist upon, and it is this—that in all cases where a part is to be transplanted, the flap should not be handled much, compressed, or violence offered to it in any way; it should be seized with a spring-forceps, or held gently with the fingers, and elevated as the dissecting-knife frees it from beneath. By this measure alone can its vitality be insured, and a certainty obtained as to its accepting the union necessary to vitalize it in its new position.

ART. II.—*On Syphilization*[a]. By WILHELM BOECK, M.D., Professor of Medicine at the University of Norway.

[DURING a visit paid by the Editor of this Journal to Stockholm, last autumn, he saw, under the care of his friend, Professor Malmsten, in the Seraphim Hospital, some cases of secondary-syphilis which had been cured, and some which were progressing towards cure, by the syphilization treatment, after having obstinately resisted all other therapeutic means. He expressed himself much interested in this subject, the more especially as he had previously altogether discredited the statements which had been published as to its efficacy as a therapeutic agent, but could no longer doubt the living evidence which was there submitted to his observation, and the testimony of several of the most celebrated physicians and surgeons of the Swedish capital. On the Editor's return home, he received the following essay from Dr. Boeck, at whose suggestion Professor Malmsten had tested the syphilization treatment; it is now laid before the readers of this Journal, very slightly altered from the original translation into English, as furnished to him by the author, which will account for the idiomatic style and expressions which abound in it.]

IT is a fact well known to all, that M. Auzias Turenne, in trying to induce syphilis in animals, observed, that they after a number of inoculations became, as it were, proof against the syphilitic virus. He called the state which was induced in the body by the name of syphilization, and M. Sperino, being made acquainted with the observations of M. Auzias, immediately adopted the idea of using a continued inoculation with the virus in order to cure syphilis, an idea which was so speedily realized, that it seems as if both had at the same time used syphilization in men. At first the thing looked so absurd, that all concerning syphilization was considered as mere fancy; most did not find it worth thinking of, and thought right to reject it only from theoretical reasons, as if experimenting for one's self, or even looking at the experiments of others, would make one an accomplice in spreading fantastic dreams,—such being the opinion generally held as to the doctrine of M. Auzias Turenne. Now the matter has changed; medical men have already ventured, in more places than one, to repeat the experiments of M. Auzias; and it has been found that what was termed nonsense was only the plain truth; a new proof has been given, that it is better to be cautious in judging of anything *a priori*, as Nature does not always follow the way that we point out to her in our study—on the contrary, she wills that we shall find out her ways, however difficult it may be for us.

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[a] Read at the meeting of Scandinavian Naturalists, held in Christiania, July, 1856.

After the facts given to the scientific world from different places, especially from within the Scandinavian kingdom, there can be no doubt that the state which M. Auzias Turenne has named "syphilization" really exists; therefore, I am sure that I shall obtain some moments of attention while I take the liberty of communicating the results which I have obtained during the last four years, in using syphilization to cure syphilis, in order that, by exchanging ideas and experiences, we may advance this important matter.

I repeat, "to cure syphilis;" for this alone do I consider syphilization, at least at this moment, in general to be allowable; and by departing from this ground we are entering upon that of experiment, to which I shall afterwards allude. The author at first meant to use it as a prophylactic method, against which, of course, a general opposition arose, but, let me add at once, he has given up this eccentric idea a long time ago.

As is often the case, one only saw the dark side of the question,—the chief points of it were forgotten in the absurd idea of preserving everybody from an illness which is in general only for those who attract it to themselves; it was forgotten that the system, after a number of inoculations with the syphilitic virus, becomes proof to it; in fact, persons had been to that degree irritated against the said abuse of syphilization, that they did not think of the physiological side of the inquiry, which was so much the more extraordinary, as it was not here the question of any theory, but of a fact, of which everybody might convince himself. It can be readily shown, that after a number of inoculations, it is at length impossible to produce any effect,—the same result then ensues, whether the inoculation be made with the syphilitic virus or with water. The organism after such a number of inoculations seems to have acquired the same relation to syphilis as it does to vaccine lymph after a single inoculation with this latter poison. This fact has been proved in more than a hundred persons, who have been treated here by syphilization, so that I must consider it unnecessary to enter more closely upon that matter. This immunity takes place gradually, the ulcers being smaller after every succeeding inoculation, until at length the pustules are quite abortive, or the result is an absolutely negative one. This diminishing by degrees may suffer some modifications, on which I shall, however, not dwell here; I have spoken of them before. The result, complete immunity, always will take place, it will take place in all individuals,—this is a rule without exception. The immunity may take place earlier or later, the susceptibility for the syphilitic virus being different in different individuals; and besides, I suppose the intensity of the syphilitic poison to be different,—a circumstance that will occasion a considerable difference in the time necessary to produce the immunity.

In my opinion, the immunity is the chief point of the matter. It is a great physiological fact, that the syphilitic virus, by continued inoculation, annihilates itself, for this leads us to the result, that by syphilization we have entered upon a law of nature which can scarcely exist for the syphilitic poison alone; other animal poisons probably must obey the same law; we must pursue the hint here given to us,—the consequences may lead us far forward, but for the present we must hold to the fact that we have before us, that we have got possession of.

However, syphilization is not only of physiological importance and interest; it is of yet more consequence to the practical physician, as the symptoms of syphilis existing at the beginning of syphilization vanish away during its progress. This fact is quite as certain as the first one; so it is beyond doubt that syphilization *can* be used for curing syphilis; the question is, whether it *ought to* be so used.

It is evident, that it ought to be used only if its effects are in any way preferable to the remedies hitherto employed against this disease, and if, at the same time that it causes the syphilitic phenomena to disappear, it does no harm to the constitution. I shall now shortly examine the remedies hitherto known against syphilis, beginning with mercury.

Every physician of any experience must have observed that mercury is far from being a satisfactory remedy. I will not speak about the mercurial treatment being disagreeable to the patient, especially when those preparations are used which produce salivation; it is so inconvenient to the sick person, that he is obliged to be within doors, to be in bed; that after the treatment he is very sensible to cold and humid air;—all this would not be worth mentioning if mercury was a certain remedy, and harmless to the constitution, but this is not the case. Mercury is so very far from being a certain cure, that, on the contrary, it is a doubtful question whether mercury is at all a remedy for syphilis. This doubt is no new one; it is not brought forward just now in order to support another line of treatment. Authorities on the disease have long held it: I shall only name Ricord and Cullerier. But let us not protect ourselves with authorities; let us hold to that which every day's experience proves; for instance, let us see what is the proportion of relapses in our hospital at Christiania. By closely examining the reports, we have found that the number of relapses is about 25 per cent. of the whole number of individuals treated;—if now we remember that a great number of relapses do not take place until after some years; that many of these relapses never come to be treated in this hospital; that very often we find syphilis developed to its highest degree in children whose parents have been treated with mercury, and are apparently in good health; that we often find relapses in the form of osseous affections in the surgical wards, of apoplexies and incomplete and complete paralysis in the medical wards of the hospital, and in the form of mental maladies in our asylum for the insane, then I should think the per-centage number will be a very large one. I might very well add here the many scrofulous and tuberculous affections, which, in my opinion, certainly originate in syphilis,—nevertheless, I do not mean to say, that I think syphilis to be exclusively the cause of these maladies; but, by doing so, I should enter on debateable ground, which is not at all necessary for proving that mercury never produces the result we should expect from a remedy, that very often it is quite the opposite of a remedy, that it is a pernicious, a dreaded agent.

At different times other medicines have been recommended against syphilis, for the evils attendant on the use of mercury have been at all times well known; but mercury has been always again returned to, as, notwithstanding its imperfections, it has the power, in the greatest number of cases, of causing the syphilitic phenomena to disappear for the moment; and thus it was the best remedy we knew of.

If it be evident, as I think it is, that the remedies hitherto used against syphilis are uncertain, and even pernicious, then it is not only allowable—it is our duty—to try the new one that is offered to us. Considering the place that I hold in this University, I thought it my duty to try syphilization, so much the more as I did not find the idea so very unreasonable; and as, after the observations made during the first two years, especially by M. Sperino, I considered it certain that the method was by no means a dangerous one.

To me the only question was, in what cases syphilization might be used. I have already mentioned that I always thought *prophylactic* syphilization to be an absurdity, therefore, I shall not dwell any longer on it. The question is, whether syphilization ought to be used in all cases where syphilis exists. This question is easily answered. I cannot predicate with certainty if all those who get primary syphilis will get constitutional disease; the simple chancre is not in general accompanied by any constitutional affection; the Hunterian one is certainly a consequence of a constitutional syphilis, but we may easily deceive ourselves in respect to the induration; therefore, I never use syphilization where there is merely primary syphilis; it is not until the constitutional symptoms have appeared that I consider this method allowable, for then I am convinced that I do not introduce anything into the organism but what is there before. I cannot double a malady already present, so I am quite certain not to do any harm to the patient.

Syphilization, however, is not used with equal success against all cases of constitutional syphilis; we must discriminate two classes of cases,—those which have not been before treated, at least not with mercury; and those which have been mercurialized.

In the first class of cases—those which have not been treated with mercury—there may be some difference, according to the different phenomena that take place, the duration of the malady, the patient's age, and, in children, their having an inherited or an acquired syphilis; but one point never alters—the progress of syphilization will be regular, the syphilitic phenomena will vanish away by-and-by, and if even now and then there appear new eruptions, new phenomena, one may quietly shut his eyes and go on inoculating; immunity *will* take place, and recovery be attained with mathematical certainty.

This may be the fit place for mentioning shortly how I produce syphilization. Without any other preparation than a bath, or in my private practice even without this, I apply on each thigh, and on each arm, or on the sides only, three inoculations in every one of those places, with matter taken from a primary ulcer, or from an artificially produced one in a person who has been syphilized. I choose the first-named places for those who are lying in the hospital, but I inoculate the sides of those who, during syphilization, are going out attending to their business; however, I must add, that I never confine my inoculations exclusively to the sides; if they do not prove effectual there, I apply them on the thighs, on which we shall almost always find the ulcers to be larger, deeper, and of a longer duration; therefore, I think this place the best, and never fail inoculating there. Every third day I inoculate anew; as long as the last inoculations produce pustules, I take the matter from these. In some cases I have always tried to take the virus from the first-made inoculations, thinking to find there the strongest matter, and thereby, perhaps, be able to achieve the cure in less time; but the cases in which the treatment has been accomplished in this manner are so few that I should not venture to draw deductions from them. In syphilized children I have only applied one inoculation on each thigh, and generally also on each side every third day, or perhaps at longer intervals. The ulcerations produced in this manner may occasionally become phagedenic in grown-up persons; many wounds may be united into one, and form a large ulcerating surface; this, however, does not signify in the least, provided the treatment be continued without being alarmed, the inoculations are a certain remedy against the phagedenic ulceration. In children the ulcers are generally so small as not to cause any inconvenience; it is only in cases which have been mercurialized before, that I have sometimes seen the artificial ulcerations enlarge, yet never to an alarming degree.

In some instances the inoculated person becomes proof to one sort of virus; I then take the matter for inoculation from another, preferring a case which has had a different origin; this then proves effectual. But sometimes they become proof to this also, and I then seek for a third source; and thus I go on as long as any matter at all will operate.

Moreover, it is worth noticing that immunity does not occur, and the syphilitic phenomena do not vanish earlier, in children than in grown-up persons. The time necessary to produce immunity is about three months; however, it depends upon the number of inoculations that may be employed; upon the symptoms that have taken place; and in children it seems to depend upon their syphilis having been acquired or inherited; the quality of the virus even may not be without influence.

When immunity is attained, the syphilitic phenomena generally vanish; however, should this not be the case, it should cause no uneasiness, as they will certainly vanish within a short time, without any remedy being used.

It is not uncommonly the case, that during syphilization a new eruption takes place; but this always exhibits symptoms of the same nature as were observed at the beginning of the process of syphilization. These eruptions need not cause any anxiety; the operator may quietly go on inoculating, and things will proceed as in other cases. One phenomena that I have often seen develop itself under syphilization is iritis; this has been very intense in some cases, but I do not make it the subject of any special treatment, either antiphlogistic or derivative, and the result has hitherto been always favourable.

The syphilitic poison does not run a rapid course, as was known a long time before we heard anything of syphilization; we often see the constitutional symptoms not to show themselves until after some months; therefore, there is nothing astonishing in the fact that the curative results of inoculation do not show themselves until after some time.

It also happens, that even after the immunity has taken place, new excoriations or exudations on the pituitous membrane, or mucous tuberculæ on the scrotum appear; I leave these cases to themselves; in some weeks they will vanish away, and hitherto I never saw any return of them. It is well worth noticing, that it was only in individuals treated during the last year, I have seen this late evolution of new phenomena: thus it seems as if the quality of the virus had some influence.

The treatment by means of syphilization of those who have not been mercurialized generally requires three or four months. This seems to be a long time; but if it is so, we have then reason to believe, that the dyscrasy exists no longer in the body; that the recovery is complete. If time shows us that the children of those who have been treated in this manner are not syphilitic, then I should say the time is very short. Even if we admit that it is uncertain whether the dyscrasy is extinguished by this method, we have, notwithstanding, reason to believe that the relapses cannot be frequent; and if, therefore, we make a calculation of the time required for mercurial treatment and the period occupied by the following relapses, it might be proved that the syphilization mode of treatment could scarcely be expected to be shorter. If it be argued that we should use the mercurial treatment because we do not know with certainty how the case will be after syphilization, such reasoning is incomprehensible to me. It would be quite right if mercury was a *good and praiseworthy* remedy, but I do not think that any physician in Scandinavia would say, with M. Ricord, that in from four to six weeks he heals every constitutional syphilis, that he never sees any relapses, and, still less, any paralyses, mental maladies, &c. If I am right in what I have said about the mercurial treatment, then I should think, that mercury, as against syphilis, is of such a pernicious effect, we should scarcely be able to find a remedy that could be worse; so I do not understand why we should hesitate any longer to try another remedy, which has already given us astonishing results.

In my opinion, it would be wrong to give a hundredth part of a grain of mercury to a syphilitic person who had not been before mercurialized.

It is a different case when mercury has been already used: here we have not only syphilis to conquer, we have syphilis allied to mercury, and in fact, disease and remedy seem to have entered into a combination so very intimate that it is extremely difficult to dissolve it. Here syphilization does not operate with the same mathematical certainty; generally we do not gain our end by using syphilization alone; we often are obliged to have recourse to iodine; therefore we must remember that the time required for the treatment is almost always longer, and that we are never secured from relapses. Respecting these, they have been in general of no importance in comparison to the affection against which syphilization was used at first; immunity generally ensues after a small number of inoculations, and recovery will be attained in much less time than that which is necessary for the first treatment.

But if even by syphilization alone we cannot effect a cure in all cases, it is nevertheless an indispensable remedy. Patients who have been nearly destroyed by syphilis and mercury may be restored by it to health.

The cases belonging to this class may present very different aspects, and the effect of syphilization on them of course also different; I, therefore, think the best way to give my view of the matter is to arrange them in separate groups, viz.:—

1st. The early constitutional cases recently treated with mercury, in which the same symptoms have reappeared. Here syphilisation will in some cases produce as certain an effect as in cases not treated before, but we oftener find some irregularity; the phenomena vanish and return again; that which I have said takes place in the individuals not mercurialized is repeated here, namely, it is always the same forms which existed at the beginning of the syphilization that return.

2nd. The affection may be still confined to the cutaneous system and the pituitous membranes, but the tubercular forms may be predominant, ulcerations on mucous membranes may go deeper, or the affection may be in the subcutaneous areolar tissue; we may even have the *tubercular serpigenous syphilide* (Radesyge). These affections are more slowly acted upon. The reason for this may partly be found in the fact, that these forms are often rather of old standing; mercurial treatment, iodine, &c., have been used against them, and we also often see bad forms show themselves within a year after the primary affection; this seems to depend on individual constitution, for it often has no relation to the quantity of mercury, or the care taken of the patient during the treatment.

If in these cases new eruptions come out during syphilization, we shall always find them to be more superficial than the earlier affection, if even they have the same form as that which existed at the beginning of the syphilization treatment. It happens in these cases especially, that the inoculations, after a small number of them have been made, do not produce any effect, then we must give iodine, after which we shall again have larger pustules and ulcers.

3rd. Affections of the osseous system; here syphilization hardly ever seems to produce any effect; but when iodine has been used earlier, producing results of only a short duration, then syphilization united with iodine seems to relieve the nocturnal pains more certainly, but osseous tumours remain unaltered by syphilization.

4th. Affections of the nervous system,—hyperæsthesia and incomplete and complete paralysis, may occur: first, in combination with other syphilitic symptoms; and in those cases I have seen them diminish under the influence of syphilization; secondly, they may be the only phenomena left as the result of the mercurials used against the primary syphilis; and under these circumstances we see little or no effect from syphilization; however, I must observe, that all the cases of that sort which I have hitherto treated have been of old standing, and have for a long time been treated with iodine, &c. Time will prove whether syphilization might prevent the paralysis, if it were employed immediately after the attacks of giddiness or apoplexy that generally usher in the nervous affection; but it is certain that syphilization under these circumstances ought not to be left untried. Even when the paralysis is already existing, I consider it a duty to try inoculation, for if the syphilitic dyscrasy is really extinguished thereby, we may, perhaps, by syphilization prevent the paralysis from proceeding any further. It is a fact that, in the cases wherein I have employed this treatment, the state has never been made worse; therefore, I shall not fail in similar cases to repeat the same treatment.

5th. Mental maladies finally may be the result of the mercurial treatment. I have had no opportunity of employing syphilization in such cases, but I consider it well worth trying. After what I have said here, it will be observed, that syphilization, even if mercury has been used before, is of great use; however, it must be understood that these are not the cases for which syphilization is principally to be employed. Syphilis reacts upon syphilis, but syphilis does not react upon mercury.

The idea that syphilization should be the last refuge seems to me quite as if quina should not be given in the beginning of an intermittent, but that the system should be first injured by different other medicines, and then quina given afterwards.

As the result of the great many observations made with syphilization, it seems sufficiently proved, that the syphilitic virus heals constitutional syphilis, and that it cures the malady without doing any harm whatever to the organism; on the contrary, we see that the uneasiness, the rheumatic pains which often accompany constitutional syphilis, vanish under continued inoculations.

The immediate effect of syphilization upon the organism is generally also very favourable, but there are some who have thought that it may, perhaps, operate perniciously in future time. To this I have only to say, that I can show many individuals discharged from hospital more than three years ago, who have remained in uninterrupted good health, and that in not one of the persons treated in this manner, can I point out any unfortunate result whatever which could be ascribed to syphilization.

The problem, that I had, from the first, laid down for myself, to try the influence of syphilization upon syphilis, I have tried to solve in the manner now mentioned. In more than a hundred cases it has been proved that syphilis cures syphilis; it has been proved possible to make the syphilitic virus circulate through all the blood without causing any pernicious effect upon the organism. Is it possible to make this last observation useful in any other direction? My colleague, Mr. Danielssen, on seeing, three years ago, the results which I had obtained by using syphilization, conjectured, that perhaps it might be possible to cure the Elephantiasis Græcorum in this manner; I confess, that I had then no mind to entertain that idea, and I have been equally unbelieving respecting the information we have received about curing cancer by syphilization. I have, however, lately made experiments by mixing the syphilitic virus with the vaccine lymph with which I inoculated unvaccinated children who suffered from a constitutional syphilis. After these inoculations, syphilitic pustules have appeared; and in order to convince myself whether the vaccine matter had had any influence at all, I have inoculated the same children eight days afterwards with unmixed vaccine, when quite characteristic vaccine pustules have appeared. By these experiments it is sufficiently proved, that the syphilitic virus destroys the vaccine; whether this same virus may be able to conquer any other poison, any dyscrasy existing in the body, is another question, that we certainly dare not *a priori* answer in the negative; and now, knowing that, we may bring the syphilitic poison into the body without running the risk of, in the least degree, injuring the organism, there are cases in which it is allowable to make the experiment. I am at present making some few trials, viz., in a chronic eczema, and with an epithelium, and I am happy to say that both of these patients are much better.

However, I will not yet judge anything from this, for, if continued experiments will confirm that the syphilitic virus has the power of conquering the cancerous one, a new view would be opened to us in pathology of immense practical importance; we dare not think of it till after a great many experiments made with the greatest possible exactitude.

Although the thus obtained results are to me only an encouragement to make new experiments, I could not, however, omit mentioning my view of syphilization; for if others will make experiments in the same direction, we shall sooner come to certain results,

If, finally, I were to comprehend, in a few words, my opinion about syphilization used as a curative remedy, I should say:—

1st. Syphilization is undoubtedly useful against syphilis; it is the only certain remedy that we know; and it is not pernicious to the organism: mercury, therefore, ought to be banished as a curative remedy.

2nd. Syphilization is not so certainly useful against *mercurialized syphilis*, but it ought always to be tried; it often does cure it entirely, and it at least does not fail to do some good in the greatest number of cases.

3rd. The application of syphilization against other maladies than syphilis ought to be tried with the greatest possible care and exact observation.

Art. III.—*Essays on Syphilis.* No. I. *In which an Attempt is made to ascertain the true value of Inoculation as a means of Diagnosis, &c.* By William Henry Porter, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital, &c., &c.

In considering the natural history of syphilis, the most curious observation that can occur to a reflecting mind must be as to the extreme paucity of knowledge that prevails respecting it: I mean, of real and substantial knowledge, either established by experience, or susceptible of proof by logical induction. Opinions there are in abundance, of great plausibility, and sanctioned by names honoured and venerated in the profession, and doctrines so sustained by argument, and apparently proved by experiment, that one is almost ashamed to express a doubt respecting them; but of that kind of knowledge which convinces the reason, and commands universal assent, there is absolutely none. And, farther, it may be asked, is it ever likely to prove otherwise? Nearly four centuries have now elapsed since this disease, at its first appearance terrifying and scourging mankind, offered to medical science an object worthy of all the talent and industry that could be brought to grapple with it, and, as the event has proved, capable of affording full employment for them all. Doubtless designed to be the punishment of impurity and vice, it was no wonder it should prevail among their votaries, and be familiarized in their haunts; but unhappily, its influence has not been always so confined, for it has stolen into places where its presence could hardly be explained, and tainted the reputation and destroyed the happiness of many an innocent and unsuspecting victim. To unravel the mysterious operations of such a malady as this, to discover and combat and control the fearful workings of such a disease, seemed worthy of the most transcendent talent, and promised to repay any expenditure of labour: all these have been freely and liberally bestowed, and yet the result only leads to the above melancholy and desponding question. At no period were principles more uncertain and practice more unsettled than at present, when it is difficult to find two or three men disposed to view a symptom in the same light; to draw the same conclusion from a fact; to recognise the same truth in the result of an experiment; or (what is infinitely of greater importance) to entertain the same views as tc the treatment of this loathsome and formidable disease.

It must be confessed that many collateral circumstances contribute to render the study of syphilis difficult and obscure. In other diseases there is usually every fair opportunity for observation, without concealment and without deception; and whenever the history of the case offers any elucidation of a symptom, or explanation of a pathological difficulty, it is received as truth, and acted on without hesitation. Not so with lues. Here, the secrecy in which it is sought to shroud even the simplest cases, the shame that attends their exposure, and the habits of falsehood and deception thereby induced, make it difficult to submit them to the same freedom of observation that is available in other affections, while the slender reliance that can be placed on the continence or chastity of any of these unfortunates, renders all argument founded on their cases uncertain, and all conclusions incomplete. But I suspect the chief impediment to the investigation of syphilis always existed in the disease itself. Nature seems to have placed it outside the pale of ordinary maladies, where it stands separate and alone, governed by laws special and peculiar to itself, and refusing all classification or identification with every other. Perhaps here, as in many other instances, we may have indulged in the loose and illogical habit of generalizing too freely on matters of disease which we all possess, and which probably we inherit from our forefathers; perhaps we may have fallen occasionally into the error of elevating some one individual fact to the position of a general principle; but the chief mistake has been in overlooking the individuality of syphilis, and attempting to reason on and explain its wayward phenomena according to the general, or, if I may use the expression, the usual laws of disease. If the natural history of this formidable affection is to be understood, it must be examined and studied by itself.

Lues venerea is obviously a blood disease; that is, it is occasioned by the presence within the blood of some deleterious or unwholesome principle, which interferes with healthy nutrition, and is conventionally, though, perhaps, in strictness of language, incorrectly termed a poison. There are many such; and although there exists amongst them a sufficient discrepancy of symptom, progress, and termination, to constitute each a distinct and separate disease; and although they are known and spoken of in familiar language under totally different names, there runs throughout them (except in this instance of lues) such a striking pathological resemblance, as to establish an evident relationship. Thus, in being introduced into the system, each poison has its own proper and peculiar vehicle—it may be the atmospheric air, or pus, or blood, or the saliva or other secretion of an animal—but it has its own, has only one, and never deviates from the rule. When fairly introduced, a well-defined, stated period is always observed to intervene before the development of the symptoms, and this with a regularity that scarcely ever knows a deviation, so that in the affections produced by artificial inoculation, we know and are prepared for an exact and undeviating order in the time of the appearance and progress of every symptom. Again, all other poisons seem to create or cause within the constitution some definite attempt to eliminate and expel them, either by localization or by some evacuation, and the effort is usually accompanied by more or less of fever; each species producing its own particular symptom, its own fever, its own inflammation, or its own eruption, but all tending to one common result. These efforts are generally periodic and critical; that is, the symptoms last a given time, regularly defined in each, and terminate at a particular period, either in the removal of the disease, or the dissolution of the patient; and many of them are remarkable for indemnifying the person so attacked from any future illness of a similar nature. Now, in no one respect do the pathological characters and conditions of lues venerea correspond with these phenomena. It was at one time the prevailing opinion that its poison could be conveyed in so many vehicles as to render the most innocent conversations insecure; and even now, when these very general apprehensions are no longer entertained, it seems by no means certain that the contaminating principle is confined to one vehicle and one secretion. Again, there never has been any regular interval observed between the introduction of the poison and the development of its effects. Further, there is often no attempt at its elimination at all, either by the formation of a bubo, or by eruption, or by fever; and if there should be some such attempt in the appearance of an eruption, it is not limited or restricted to any one form; it may be papular, or pustular, or scaly, or, in a word, may consist of any form or species, from the simplest pimple to the foul and abominable rupia. And there is nothing periodic or critical in the character of the disease: it never wears itself out; it never recovers or subsides spontaneously; and although the virulence of the disease may abate, and the symptoms disappear, it leaves the patient as deeply poisoned himself, and as capable of conveying the virus to others, as he was before. Finally, one, or any number of attacks of lues, will not protect from future contamination; nay, there is reason to believe a person may contract a new disease whilst yet labouring under the effects of an old one; and it may be further insisted on, as perhaps a greater and more striking differential character than any above enumerated, that it is the only blood disease that has been observed to affect the unborn infant, and be thus transmitted from the parent to the offspring. If, then, lues is obedient to any laws, they must be proper and peculiar to itself: they bear no analogy to, and admit of no identification with, those of any other disease; and if a knowledge of them is to be acquired, it must be by studying every fact and every feature of its natural history, each by itself, step by step, and symptom by symptom, without expecting or even hoping for assistance from any extraneous source.

And now, in the commencement of our inquiry, the first difficulty we have to cope with is one that does not, and perhaps could not, exist with any other blood disease whatever. Can it be the case that the contaminating principle by which this foul disease is communicated from one individual to another, being contained within purulent matter formed as the result of such disease, that all this matter is not equally infectious; nay, that some is not only pure and innocuous and inoffensive, but that, the older the disease, and the more thoroughly tainted the whole system, the more harmless the discharge secreted by a sore? The answer to this question is curious and interesting, as contrasting syphilis with all other similar affections; but practically it becomes of almost incalculable importance, if it assists in unravelling some of the intricacies, and removing some of the obscurity, with which its pathology has been hitherto defaced. Let us enter on its investigation with all the calmness of philosophical inquiry. On this head the history of the disease affords but little information. We know that at its first appearance mankind, terrified at the devastation it wrought, and bewildered by its breaking out in different and distant localities, almost at the same moment, imputed its sporadic tendencies to a multitude of inefficient causes, and that to such an extent, as almost to consider the air capable of being infected by the breath of a tainted person. We know not how long such opinions may have prevailed, nor do the records of former times shed much light on this part of the subject; certainly a belief in various and different modes of communication existed up to the days of John Hunter, who first adopted the opposite extreme of limiting the power of propagating the disease to purulent matter, and even to that furnished by the primary ulcer alone. It is to him that the doctrine of the non-infectious nature of the matter of the secondary sore is entirely due; and it is supported by experiment, the first (I believe) of inoculation made upon the subject. A man was in St. George's Hospital, affected with a number of pocky sores. "I took," said Hunter, "some matter from one of the sores upon the point of a lancet, and made three small wounds upon the back, &c., &c., but all the wounds healed up, and none of them ever appeared after." Again, a man who had venereal blotches on the skin was inoculated in sound parts with matter from a chancre, and also with matter *from his own sores*. The wounds impregnated with the matter from the chancres became chancres, but the others healed up. Now, these experiments are conclusive as far as they go. It will not be sufficient to deny the fact on the ground of experience, and to say that many surgeons of unquestioned accuracy of observation have refused to be bound by the authority of Hunter, and have expressed opinions, and furnished proofs (some of them as painful as they were convincing), that the matter of secondary venereal was eminently infectious. In the face of these opinions these experiments stand. They are faithfully true, for I have repeated and verified them myself; but at the same time they must not be received for more than their actual value. All these experiments have been performed on patients with matter taken from their own sores: there is no instance of what may be termed extraneous matter having been employed, and indeed I cannot conceive any surgeon, acquainted with the fearfully uncertain nature of the disease, performing such an experiment. The conclusion then, and the only legitimate conclusion that has been arrived at as yet, is, that a chancre cannot be produced in a man already tainted with secondary syphilis, by the inoculation of matter taken from one of his own sores.

For nearly half a century the subject was allowed to rest in that position; some surgeons, viewing the talents of John Hunter with a respect amounting almost to veneration, and believing that opinions founded on experiments conducted by him could not be erroneous, adopted them at once, and refused to receive or to acknowledge any evidence to the contrary; whilst others, relying on observation and experience, and trusting to the proofs derived from their own senses more than from any experiment, refused altogether the doctrines of Hunter, although, as far I know, they never attempted to explain them away. They were then not only taken up and adopted by Ricord, but pushed to an extent which, if true, would assuredly prove the individuality of lues, and separate it from all other diseases in a most decisive and remarkable manner. His view may, I think, be simply and fairly stated thus, viz.:—The essential characteristic of the disease is ulceration—it produces sores at all times and all stages; but although purulent matter is confessedly the principal vehicle by which the poison may be propagated, it is only during a very short and limited time that its powers of contamination exist in perfection; it is only during the first few days of the existence of the chancre, or primary sore, that the matter of syphilis is infectious. Thus it appears that every syphilitic symptom has two remarkable stages: one, of advancement to its state of maturation or perfection; the other, of decline: and it further seems to be confirmed by Ricord's experiments, that the chancre is only infectious during the first of these, namely, from the first appearance of the sore to the period of its maturation; and that subsequently to this stage it loses its infecting quality, and may be inoculated with impunity. But M. Ricord is too important a person not to be permitted to speak for himself. He says, p. 85:—"Le chancre, qui est à la vérole constitutionelle ce qu'est la morsure du chien enragé à l'hydrophobie, ne produit, toutefois, un pus specifique qu' à une certaine èpoque de sa durée et c'est bien certainement faute d'avoir apprécié ce fait si simple que les resultats de l'inoculation ont pu être contestés ou paroitre incertains. Il est bien evident que l'ulcère syphilitique primitif ne saurait être le meme a tous ses époques et qu'il ne pourrait arriver à la cicatrization s'il ne passait enfin a l'etat d'ulcère simple par la destruction de la cause que tendait à l'entretenir." And again, in another place:—"En effet, le chancre, comme nous l'avons deja vu, a deux phases bien distinctes; la premiere, à laquelle le nom appartient rigoureusement, est celle d'ulceration croissante ou stationnaire; c'est elle que fournit le pus special; la seconde, qui est celle de reparation n'arrive que par le passage à l'etat d'ulceration simple, permettant la cicatrization ou la transformation sur place, et ne fournissant plus la secretion specifique virulente." Such are the opinions of M. Ricord, a man whose transcendent talent and great experience must command respect; and, like those of Hunter, they seem to be sustained by experimental evidence. It is on the results of inoculation that he has based his great proposition—"*a chancre at the period of progress, or of* statu quo *specific state, is the* ONLY *source of the syphilitic virus;*" and this argument, supported as it is, or at least appears to be, cannot be got rid of by mere assertion, or even by analogies, however forcible. I believe in Ricord's experiments implicitly. I feel certain they were honestly performed and faithfully recorded, and am fully prepared to yield to them all the importance to which they are logically entitled. I have searched with the utmost diligence through the entire of his work, and I find that his experiments were in every instance, like those of Hunter, performed on the individuals themselves; and in no case is there even reason to infer that the matter introduced by inoculation into one subject had been taken from another. This limits the universality of the conclusion very materially, for in reality it proves nothing of what might have happened had the matter been taken from a stranger; and in establishing (as I concede it does) that if the pus of a recent chancre be inserted into another part of the same man, it will produce a chancre, but if the sore happens to be an old one, it will not, it goes as far as a logical influence will warrant. Let us now examine the question in this aspect.

I believe if there is any one circumstance connected with the venereal disease established by observation and experience, it is, that if a tainted mother has a pocky child, she may tend and suckle that child without the slightest risk of being inoculated by it, but if she gives it out to another woman to be nursed, this latter will most certainly be infected. This proves that there are some conditions which refuse the reception of an infection which would be taken by another. "For[a] a long period back," said the late Mr. Hewson (an unquestionable authority on venereal), "I have been in the habit of noting the cases of many married women, who for a succession of years have been attending the Meath Hospital, bearing pocky children, and repeatedly subject to secondary chancres, and yet, when I have examined the husbands, I have not been able to trace a symptom of lues, either local or constitutional. From these observations, if confirmed by the experience of others, we might, perhaps, infer that the same stock of syphilitic poison does not infect the same individual more than once, or, if reconveyed to him, that it is innoxious." Again, to follow this train of observation farther, I find it stated in the late Professor Colles' admirable work:—"It is[b] a curious fact that I have never witnessed, nor ever heard, of an instance in which a child, deriving the infection of syphilis from its parents, has caused an ulceration in the breast of its mother." And in another place:—"Although[c] among these secondary symptoms some raised ulcers shall fix upon the external pudenda of the wife, yet the husband shall rarely suffer from these." Finally, and to quote but one authority more, the late Dr. Beatty, in an Essay[d] on Premature Labour, published so long since as 1824, speaking of a celebrated courtesan who, being constitutionally disordered, and not wishing for living offspring, never would allow herself to be cured, says:—" It was remarkable of this lady that she frequently disordered men, but never the gentleman she lived with, except in the first connexion." I might pursue this train of reasoning almost to an unlimited extent. I might insist on my own experience in strong corroboration of the foregoing remarks, and quote other reliable living authorities, for they are easily to be obtained, but I prefer this other, because I think it a more convincing line of argument; I prefer showing that facts were observed by different men at different times, all most acute practitioners, and trustworthy, truthful men, who, moreover, registered them as facts, without having any principle to evolve or theory to sustain; and that these facts are capable of being expanded into a law, which, brought to bear upon the natural history of the disease in its different relations, may rectify many erroneous impressions, and help to resolve difficulties that are otherwise inexplicable. This law may thus be shortly expressed, that *the infection of syphilis never returns upon itself, or recontaminates the source from which it had been derived.*

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[a] Manuscript Lectures, unpublished.

[b] Colles on Venereal, page 285.

[c] Ibid., p. 263.

[d] Transactions of the College of Physicians.

Now let us avail ourselves of the assistance of this principle in examining the question of inoculation. When John Hunter took purulent matter from the arm of his patient, and inserted it into his back, it is manifest he was endeavouring to introduce infection into the very system that had furnished it, and recontaminate a circulation already fully saturated. Why, on the most superficial consideration of the case, it seems unreasonable to suppose that he could have succeeded; but if it be true—and no one of observation and experience can doubt the fact—that a mother, in giving suck to her own pocky child, cannot be reinfected by a poison originally derived from herself, and that a husband, having disordered his wife, cannot receive his own infection back again,—assuredly it is absurd to suppose that inoculation from a man's own poison could have other than negative results. Hunter's experiments, therefore, proved nothing, and it would be well if they could be dismissed with this harmless censure; but they were, however unintentionally on his part, positively mischievous. The mind of this great man, although not richly cultivated in early life, had a truly philosophic tendency, and he, therefore, attached more importance to the demonstrative evidence of one experiment than to a world of speculation. I can easily conceive the difficulty he must have experienced in reconciling the curious and anomalous facts that a sore in the earliest stage of its formation, and before it has time to reach the system, shall be eminently infectious; but that subsequently, when the circulation is completely poisoned and corrupted, the matter of the ulcer shall be harmless. Still further can I imagine his embarrassment when in practice he met with those thousand evidences that beset us every day, such as the spreading of the disease introduced by an infant through an innocent family, and which could not be explained consistently with the idea of the non-infectious nature of secondary matter. But all sank into nothing in comparison with the positive evidence of an experiment which is now seen not only to have proved nothing, but to have done worse in suggesting and sustaining a fallacy that has exerted a baleful influence on the practice of surgery ever since.

But this principle must be brought to assist us in another part of the inquiry, for inoculation has been employed to prove the innocuous nature of the primary ulcer when in a healing state, and restrict its infecting power to its progressive state. This doctrine owes its origin to Ricord, and is, therefore, entitled to all the respect due to great talent, immense opportunity, and most extended observation, but every opinion connected with syphilis eventually becomes of practical importance, and must be carefully and even rigidly examined, lest, being set forth in all the pomp and circumstance of philosophic demonstration, and regarded as establishing the truth, it might really be the cause of great and grievous error. He says that it was for want of recognising this *simple* fact of the harmlessness of the matter of the healing sore, that the results of inoculation were disputed or appeared uncertain, but it would be curious if this proposition ought to be reversed, and that it was by means of inoculation that the simple error of supposing it to be innocuous ever came to be entertained. When a chancre is contracted, it remains for a time a perfectly local sore, but how long or how short that time may be is altogether uncertain; perhaps it may vary considerably in different individuals. Then it is supposed that the poison is absorbed and becomes diffused throughout the system, and this contamination is perfect and complete before the original ulcer has healed, and before a secondary symptom has made its appearance. Now, if matter is taken from a very recent chancre and inoculated into a sound part, before absorption has taken place and the system become tainted, it is exactly as if it was inserted into a new and healthy person: it ought to produce a chancre, and, if the operation is properly performed, most certainly will do so; but if the chancre is of some standing, and time has been allowed for the poison to be absorbed and the system generally contaminated, it is but returning infection on its own source; according to the principle I am labouring to establish it ought not to give a positive result, and, probably, it will not. In the first experiment the inoculated part is pure and healthy, and the infection new with relation to it—in the latter it is manifestly an attempt to recontaminate a part already infected with the same poison. The only objection I can discover to this explanation of the results of inoculation lies in the uncertainty that exists as to whether a system is completely poisoned before the actual appearance of secondary symptoms: this, perhaps, can never be ascertained with scientific accuracy, but the probability is that the contamination is completed at a comparatively early period, and that the occurence of the eruption, or the sore throat subsequently, is but the effort of nature to eliminate and localize the disease. However, the bare possibility of the occurrence alluded to must so vitiate any experiment as to render the result inconclusive and unsatisfactory.

It is now evident that the whole value of inoculation as a test of the infecting power of any matter rests on the truth or falsehood of the law I have propounded, and I am well aware that this latter will be questioned, and even denied by many, unwilling to forego long cherished opinions, and abandon a theory supported by such imposing authority. I can only appeal to time for its ratification if true, for its contradiction if otherwise, but meanwhile let it not be supposed that I prefer the smallest claim to its discovery. I found it stated in works of standard reputation—I heard it from lips from which I received my earliest and most valued instruction—I have verified it by my own observation—and, firmly believing in its truth, I have seized on and employed it in the examination of a doctrine that appeared to me to involve not only strange anomalies, but serious contradictions. For example, Ricord states in another place (p. 360), that if indurations remain around a *cicatrized* chancre, in the event of such cicatrix being broken, the sore so formed will be again infectious. Now, whence will it derive its poison? It had been healed, and this could not have happened unless it had passed the *statu quo* period, had then become quite harmless, and, in fact, a simple ulcer, yet having become thus harmless and healed, it breaks out again a virulent and mischievous ulcer. I wonder what results would inoculation have given from such a sore just before it had healed, and just after it had broken out afresh! This and several other propositions appeared to me so strange, and indeed, irreconcilable with my own experience, that I commenced an examination of the subject more minutely, and the result has been as I have stated. Without this law, and supposing its non-existence, the experiments of inoculation remain uncontroverted as experiments, but they leave all the other anomalies unanswered and unexplained; with it, on the other hand, every difficulty is swept away, and we can believe, and even know, that Ricord's experiments were perfectly true, and their result exactly as stated by him, but his inferences from them insufficient. He refers the infecting or non-infecting power of the matter to the chancre, whereas it appears that he ought to have referred it to the constitution. But it is not with respect to Ricord's experiments alone that this law is influential, inasmuch as it invalidates all that has been hitherto done by inoculation, and shows that the success or failure, the positive or negative result of the operation, depends, not on the progress or status of the ulcer, but on the progress or status of the poison in the system. It does more—it shows that no experiment of the kind can be relied on, unless it is made on new and untried ground: its subject must be sound and healthy, pure, and perfectly free from taint. Whether any person will ever be found so recklessly wicked as to inoculate another with syphilitic matter, of any age, or state, or standing, I shall not presume to say; but I am quite certain that no other mode of dealing with the subject will ever furnish results that can be implicitly relied on.

There is one other point of view in which the subject of inoculation remains to be considered. It is well known that it has been adopted, and greatly and generally relied on as a means of diagnosis, and as furnishing the best, if not the only, evidence of the character of any given primary sore. Every day we read of different experimental series, prosecuted with diligence and reported with the utmost accuracy, evidently showing that with the majority of surgeons this mode of investigation is still firmly relied on, as affording evidence derived from sensible demonstration. Truly, any method of inquiry that could enable a practitioner distinctly to recognise the syphilitic characters of an ulcer, and, without risk of mistake, distinguish it from all others, must be of incalculable value; but, at the same time, the mere fact of its being supposed to possess such value, should subject it to the more rigid examination. Unfortunately, even the advocates of inoculation cannot claim a uniformity of results, and are obliged to acknowledge its occasional insufficiency—a circumstance easily explained by the principle just passed under review. Now, independently of such principle, and placing it altogether out of view for the present, it is difficult to comprehend what those who practise inoculation, and rely on it as a means of investigating the disease, can exactly expect from its results. It is assumed, that if a portion of purulent matter be taken from a suspected sore, and introduced into another part of the body, the character of the new ulcer thereby produced (if it does occasion an ulcer) will declare the character of the original sore; thus, if pus be taken from a chancre on the genitals and introduced under the skin of the thigh, which seems to be a favourite part for the experiment, if there should not be an ulcer in consequence, or, there being one, if it should prove devoid of all specific character, and disposed to heal,—it furnishes evidence that the supposed chancre is not a true and genuine venereal sore,—whereas an opposite result would be taken as establishing the contrary conclusion. Now, is it the case that the syphilitic characters of an ulcer can be easily recognised on the thigh, and with difficulty on the genital organs?—is it the case that one situation more than another can exercise any influence on the specific characters of a sore? or is it the case that the examination of an ulcer produced by inoculation can teach anything that might not have been learned from the sore that originally furnished the infection? Until these questions are answered satisfactorily, I can feel but slender confidence in the practice at all, not alone because that in order to supply any reliable information it ought to be performed on an untainted person, but also, that I can discover no reason why the matter taken from any given ulcer should occasion in the same individual other than the same kind of ulcer, with exactly the same characters and appearances; or why any difficulty that might exist in determining the nature of the former should not exist to an equal extent in the latter.

LIBRARY.

ART. IV.—*On the 'Measle' of the 'Pig,' and on the Wholesomeness, as Food for Man, of 'Measly' Pork.* By ALEXANDER FLEMING, M. D., Professor of Materia Medica, Queen's University, Ireland.

THE following Report was furnished to the Committee of the provision merchants of Cork, who applied to me for information on the subject to which it refers, in January, 1856. Stated briefly, the questions submitted by the Committee were:—1. What is the nature and origin of 'measle' in the pig? 2. Are all pigs 'measly'? 3. Can pork be 'measly,' and that condition be invisible to the naked eye? 4. Is there any analogy between 'measles' in the pig, and the disease known by that name in man? 5. Is fresh 'measly' pork wholesome? 6. Is cured 'measly' pork wholesome? 7. What is the chemical composition of the 'measle'[a]?

Twenty-one specimens were supplied to us, viz.:—

Seven of fresh healthy pork, from different parts of different pigs; six of fresh pork, 'slightly measled;' seven of fresh pork, 'badly measled;' one of cured pork, 'badly measled.'

"The 'measle' of the pig is an animal parasite, the *Cysticercus cellulosæ*, or bladder flesh-worm. It infests the muscles of all parts of the body, but is found most frequently in those of the tongue, loin, and neck, and is often seen in the muscular substance of the heart, lying between the fibres of the muscle. It is seen as an ovoid bladder, from two to four lines in length, formed by a thin, transparent membrane, and enclosing at one extremity an opaque body, of a white colour. This is the worm coiled up, but which, when unfolded, exhibits a head, neck, and pear-shaped vesicular tail. The head is armed by a crown of barbed hooklets, around which are placed four sucking mouths, and the neck is formed of a series of rings, which gradually lose themselves posteriorly on the dilated and bladder-like tail. In the interior of the worm are a number of microscopic corpuscles. The average diameter of these bodies is 1-1500th of an inch, and their usual form that of a flattened, circular disc; but they vary both in form and size[b].

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[a] I was requested to associate with me in this inquiry my colleagues in the Chairs of Natural History and of Agriculture, and the Report in the text was prepared by me to embody the joint results of our investigations. It was signed by me and Professor Smith. Mr. Murphy sent in a separate Report, but his views are substantially the same. Drawings of some of the parts of the Cysticercus are given by Gulliver, in the London Medico-Chirurgical Transactions (vol. vi., second series). See also Huxley's Lecture on the *Tæniadæ*, in Medical Times for August, 1856.

[b] These cellules were regarded as eggs by Klencke and Gulliver, but are now con-

During the life of the pig, the bladder enclosing the worm is fully distended with a pellucid fluid, but after the pig's death, a portion, or all, of the contained fluid escapes into the surrounding tissues.

"In the specimen of cured pork sent to us, the bladders were empty of fluid, and the microscopic corpuscles in the body of the worm presented a central granular opacity, instead of being clear and transparent, as in the fresh specimens. *We believe that the life of the parasite is destroyed by the process of curing.*

"It is now maintained by several eminent physiologists, that this fleshworm is the *scolex* or imperfect condition of the tapeworm or *Tænia solium*, and that, when passed alive into the intestinal canal of man and other mammalia, it assumes there a higher degree of development, and becomes a tapeworm—a troublesome parasite—often causing distressing symptoms, and impairing the health. The organization of the fleshworm, as now described, goes far to establish this opinion, if, indeed, it be not already placed beyond doubt by the results of experiments in which it was shown that dogs fed on fresh measly pork became affected with tapeworm. With us the parasite is killed by cooking, but where the flesh is eaten raw, as in Abyssinia, tapeworm is very common.

"*All pork is not 'measly.'*—In the specimens of healthy pork we found no trace whatever of the parasite in any stage of development.

"In the specimens of both 'slight' and 'badly measled' pork submitted to us, the worms were all visible to the naked eye. All appeared to have reached the same degree of organic growth, and in none of the specimens, healthy or otherwise, could we find eggs or the slightest trace of the parasite in an earlier stage of development.

"This parasite has been found in the muscle, brain, and eye of man; but *there is no analogy whatever between 'measles' in the pig, and the disease known by that name in man.*

"It is highly probable, if not quite established, that 'measles' originate in the eggs of the tapeworm which infests the bowels of the dog. Each mature joint of the last parasite contains many thousand eggs. These, when voided by the dog, are resolved into a fine dust, and are scattered by the wind, and thus, mixing with the food or drink of the pig, enter its body,

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sidered to be organs of assimilation. The four raised discs around the head are not mouths, as was formerly supposed, but rudimentary suckers, by which and the hooklets the animal is enabled to attach itself to the adjoining tissue. The same organs attach the full-grown tapeworm to the intestinal mucous membrane.

and are there converted into the 'measle' or fleshworm, which, as already stated, is an imperfect condition of the tapeworm. 'Measles' may not form in every hog that has swallowed tapeworm eggs; while a feeble digestion and constitutional debility may especially favour their hatching in some pigs.

"If this view of the origin of 'measles' be correct, it will be an important and rational guide to the prevention of the disease, and which will consist *in providing the pig with thoroughly clean food and drink, promoting its general health, and removing it from the neighbourhood of dogs affected with tapeworm.*

"When only a few of the parasites are scattered in the body of the pig, the flesh does not differ from that of healthy pork in its ordinary characters or minute structure, and the general health of the pig is not affected. When used as food, it must be so rare that the vitality of the worm can escape cooking, mastication, and digestion, that we believe the risk of tapeworm from its employment to be very small; and, on the whole, *we see no valid reason for regarding 'slightly measled' pork as unwholesome;* but it must be well cooked, and never eaten raw or underdone[a].

"On the other hand, when the parasite is thickly distributed throughout the muscle, the flesh is pale, soft, and watery, and the muscular fibre near the worm loses its healthy structure, and exhibits evidence of the condition known to pathologists as fatty degeneration. The health of the pig is much impaired, and in the worse forms of the affection we may have inflammation, and suppuration in one or more parts of the body, with general fever, wasting, and weakness. The pig is seldom permitted to see this stage, and almost never to survive it.

"When the disease proves fatal, according to Mr. Martin, the animal loses appetite, blisters form under the swollen tongue, the skin ulcerates, and death occurs amidst extreme debility and emaciation[b].

"'Badly measled' pork is insipid when cooked, and in boiling loses more weight than healthy pork. It is more difficult to dry, and exhibits greater proneness to putrescence[c]; while, respecting its use as food, we must not forget the possibility of its causing tapeworm, nor the risk of some portion of the animal having undergone during life changes of a truly morbid nature, as inflammation and suppuration. Taking account of all these circumstances, we cannot regard 'bad measly' pork, fresh or cured, as wholesome food for man.

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[a] The process of curing is fatal to the parasite, and removes all risk of tapeworm.

[b] Farmer's Library, vol. ii. p. 491.

[c] These facts were determined by repeated comparative observations with healthy pork.

"This opinion may be assailed on the ground that 'bad measly' pork is consumed to a large extent, and that no hurtful effects have been traced to its employment. But we cannot trust to common experience in a question of this nature. Putting aside the ordinary sources of fallacy, the poor consumer of such meat is rarely capable of tracing the relation of cause and effect between bad food and its evil consequences. He would conclude meat to be wholesome which failed to produce some striking bad symptoms soon after a meal, and would be unable to refer to its true cause the injurious influence, slowly and silently, but not less certainly, wrought upon his system by the long-continued use of an unwholesome article of diet.

"Chemical analysis could not aid much in this inquiry, but, were it otherwise, the time allowed us did not permit of its employment."

The 'measle' in the hog is more observed in Cork than elsewhere in these islands. This is in part due to its being more carefully sought for; but chiefly to its greater frequency, caused, I apprehend, by inattention to the cleanliness of the pig's food and drink, and by the circumstance of its being reared in the peasant's cabin, where it has very generally a dog (untaxed in Ireland) for a companion. This dog, for the most part, has tapeworm. Nor must we forget the influence of our low marshy grounds and warm humid climate, in favouring the production of parasites, and especially of worms. These conditions may induce a state of constitution in the pig favourable to the reception of the parasite, and we can readily understand that a warm and moist air should favour the incubation of the tapeworm egg and development of the young tænia outside the body.

I am informed that in Cincinnati, the largest pork-market in the States, the 'measle' is unknown. If this be the fact, it would be interesting to know whether the pigs brought to that city, and which are fed chiefly in the forests of Ohio, Kentucky, and West Virginia, are kept apart from dogs having tapeworm. Perhaps some of our American readers could inform us on this point. Dr. Wood, of Philadelphia, says that tapeworm is comparatively rare in the natives of the Union.

The researches of Kuchenmeister, Röll, Leuchart, Von Siebold, and Van Beneden, leave no doubt of the connexion between the cystic and cestoid entozoa. Experiment shows that the 'measle' is generated in the muscle of the pig by feeding it with ripe joints of the dog's tapeworm (the *Tænia serrata*, now considered to be the same as the *Tænia solium*, or human tapeworm), and that the same tapeworm is developed in the intestines of a dog fed with fresh measly pork. The 'measle' is not generated in the dog by feeding it with the tapeworm eggs.

Leuchart has traced in the rabbit the passage of the embryo tapeworm into the bloodvessels. The eggs are quickly hatched in the stomach, and the young tæniæ bore their way with their lancet-armed heads through the mucous membrane, and into a bloodvessel. With the blood they are carried in the rabbit to the liver, to be there arrested and developed into hydatids or Cysticerci. In the lamb, the young tæniæ are carried with the blood to the brain, where they fix and grow into the cystic parasite named *Cœnurus cerebralis*, and within two weeks of the commencement of the experiment the lamb is affected with the 'staggers.'

The cystic entozoa or hydatids do not form a separate class of parasites, but are merely the cestoid entozoa or intestinal worms in a degenerate state; and the same embryo tapeworm produces different forms of hydatid, according to the species of animal and part of the body in which it may chance—or rather, I should say, mischance—to be developed, for the hydatid is essentially abnormal both in form and site, and these entozoa obtain their perfect growth only in the intestinal canal—their proper dwelling-place. The young tapeworm, swimming in the blood, is fixed probably by getting into a capillary too small for its passage; and the reason of its being arrested by preference in the muscle of the pig, brain of the sheep, and the liver of the rabbit, may perhaps be found in the relatively small size of their capillaries.

As the egg of the same tapeworm develops both the 'measle' in the pig and the 'staggers' in the sheep, the means of prevention suggested in the Report, for the former disease, will apply equally to the latter. In addition to the means of prevention there mentioned, it might be well to reduce the number of dogs in the country, and to diminish the frequency of tapeworm among them by not feeding the healthy with raw flesh, and by the vigorous treatment of the diseased. The excrement of dogs should not be mixed with the manure for pasture fields.

There is more hope of preventing measles than of their cure. I made many inquiries as to the treatment of the disease, but without obtaining information of much value. The farmers generally are sceptical as to cures being ever obtained, but a few have faith in treatment; and, of the several remedies employed, the internal use of sulphur is most relied on. Two or three cases were mentioned to me by trustworthy persons, in which cures appeared to have been made by this drug. It is probably converted in the pig's body into sulphurous acid, and poisons the 'measle.' This acid is a most efficient parasite-killer. Alcohol, iodine, camphor, turpentine, and nitrate of silver, are actively poisonous to the cystic parasites, and their internal use may be tried.

In Cork the pig is examined for 'measle' by official persons, both in the living and dead markets. The parasite shows itself at a very early stage of the disease in the tongue, and this organ is inspected in the living market. The pig is placed on its side and the mouth opened. The tongue is then drawn forward and pressed firmly between the fingers in its whole length. The 'measle,' if present, is felt by the finger, and withdrawn through a scratch in the mucous membrane. If none are felt, the pig is passed as healthy. This test is the best known, and is very useful, but the worm may be absent from the tongue and present elsewhere in the body; and a more certain means of detecting the disease in the living animal is to be desired.

In the wholesale dead market, the inspection is made by making a free cut lengthways into the inner loin muscle at the side of the spine, and by cutting across the neck. And, should the purchaser desire it, cuts are made into the flesh elsewhere, as the back of the neck and shoulder. If one 'measle' only is found, the price is lowered 5*s.* per cwt., and if more are seen, a larger reduction is made, varying from 5*s.* to 15*s.* per cwt., according to the number. The worse forms are not sold in this market.

Respecting the origin of tapeworm in man, from the 'measle' of the pig, a case in favour of this view has been recently reported by Dr. Gairdner. It is that of a female in Edinburgh, who was in the practice of eating raw fresh pork, and is now affected with tapeworm,—the more curious, as the habit of eating raw flesh, and the disease, are both rare in that city.

The process of *curing* destroys, as we have shown, the vitality of the parasite, and to this circumstance the immunity from tapeworm, enjoyed by the inhabitants of Cork, must be attributed. The poor of this city, among whom tapeworm is very rare, undoubtedly consume a large quantity of 'measly' pork, but always salted. The freedom of seamen in the navy from tapeworm admits of the same explanation. Much of the pork formerly used in the navy was measly, but it was well cured. At the present time, the naval contracts are inspected with care, and 'measly' pork is rejected[a].

The use of raw 'measly' flesh cannot, however, be the only source of tapeworm in man. This parasite occurs among the very poor, who scarcely eat flesh of any kind, and it plagues the Hindoo, who lives almost exclusively on rice. It may, perhaps, originate from the direct introduction of the tapeworm eggs or young tæniæ with the food or drink into the stomach. Klencke, many years ago, asserted that he had found microscopic young tæniæ in ditch-water, and the frequency of tapeworm in Vienna has been attributed to the water of that city, in which young tapeworms have been detected.

Why, when thus introduced into the stomach of man, the dog, pig, and sheep, respectively, they should cause tapeworm in the first and second, and pass into the blood of the third and fourth to grow cyst-worms, may be explained by supposing that in the carnivor's stomach the mucous membrane is tougher, or that the young tæniæ are destroyed by the strong, acid, gastric juice, except on rare occasions, when they slip alive into the intestines to grow tapeworms; while in the herbivorous[b] stomach, where the food lies long, they escape digestion, the gastric fluid acting feebly on animal matter, and, piercing the softer mucous coat, make their way into the circulation.

These remarks have brought me to difficult, and as yet obscure ground, and, in truth, although great progress has been made of late years in our knowledge of intestinal worms, much remains to be done as well for their natural history as for those important questions in hygiene and pathology to which they give rise, before we can attain to clear views and definite conclusions.

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[a] While engaged in this inquiry, my friend, Dr. John Burns, of H. M. S. Hastings, communicated with several of his brother medical officers to learn their experience of the use of 'measly' pork in the navy. Tapeworm had not been traced to its employment. During the summer of 1855, Dr. Burns states that the provisions issued were uniformly of good quality.

[b] Cysticerci infest the flesh of several vegetable feeders, as the ox, deer, sheep, hare, rabbit, and mouse.

Art. V.—*On the Resection of both Upper Jaw-Bones*[a]. By Dr. Oscar Heyfelder, Private Lecturer on Surgery and Ophthalmic Medicine in the University of Munich; Member of the Academy of Naturalists at Breslau, and the Academy of Surgery at Madrid; of the Medical Societies at Vienna, Paris, Leipzig, Munich, Strasburgh, Brussels, Erlangen, Valencia; of Legal Medicine in Baden; and of the Surgical and Anatomical Society at Paris.

It is well known that in the year 1824, Roger (according to Velpeau[b]), and soon afterwards Liston[c] and Dupuytren[d], performed to a greater or less extent partial resections of both upper jaw-bones. The first total removal of these bones must, however, be ascribed to J. F. Heyfelder[e], who accomplished it in the year 1844, and repeated it twice in the years 1850 and 1852.

In two cases I aided in the operation as medical assistant of the hospital; in all three cases I had occasion to see the patient previous and subsequent to the operation, and to study the diseased parts removed by the resection.

Case I.—Andreas Schmidt, aged 23, entered the surgical Clinique at Erlangen, on the 13th of June, 1844, in consequence of a tumour, which, according to the assertion of the patient, had issued a year previously from the hind part of the palate, and had extended itself over both upper jaw-bones.

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[a] [We have received this very interesting essay on an important surgical operation direct from the author, with the following letter, which we make no apology for laying before our readers. We feel highly flattered at his selection of our Journal for its communication to the profession in the British islands; and in revising it for the press, we have altered the orthography as slightly as possible, being anxious to retain Dr. Heyfelder's excellent, though, of course, somewhat idiomatic, English translation. —Ed.

"The accompanying manuscript I have the honour to send, with the request that you will, after some inspection and correction, insert it in your much read and highly valued Journal. I found in No. xxxi., page 36, for the year 1853, a notice, by Butcher, of the resection of both superior maxillary bones performed by my father; and I think I send you a not wholly valueless dissertation on this subject, whereby it is my object, at the same time, to prove the fact, to furnish a useful contribution to scientific surgery, and to extend my father's fame. But, at all events, I should also consider myself extremely fortunate if this should lead to a further scientific intercourse, which might keep me in communication with you.

"6, *Promenade-place, Munich, October,* 5 1856."]

[b] Méd. Opérat., t. ii. p. 628.

[c] Lancet, November, 1836, p. 267.

[d] Leçons Orales d. Cl. Chir., 2ème edit., t. ii. p. 453.

[e] J. F. Heyfelder was then Professor of Surgery at Erlangen, afterwards Chief Surgeon of the Finland Army; now employed at St. Petersburgh, in the Medical Department of the Ministry of War.

By this pseudo-plasma, which increased every day, the nose was forced upwards, and at the same time pressed flat; the palate was dislodged and lowered upon the tongue; the face swollen, and resembling that of a monkey; both the breathing and speech impeded; sleep restless, and troubled with anxious dreams. Except the two middle incisors, all the teeth were preserved loose, but in a healthy state. The tumour itself was in all its parts hard, uneven, not very sensible to the touch, and not extending beyond the limits of the jaw-bones. No signs of an existing dyscrasia, nor of earlier diseases. Only latterly the face, and especially the region of the upper jaw, were affected from time to time with severe pains. From these antecedents, as Professor Heyfelder observed in presenting the patient to his class, he was authorized to conclude that the tumour was not of a benign nature; on the contrary, all seemed to prove it was a medullary carcinoma, which required not only a mere excision, but even the removal of the base of the evil. But this could not be effected except by the resection of both ossa maxillaria. This operation not having hitherto been performed, Professor Heyfelder could not conceal from himself either the difficulty or the danger connected with so important a surgical proceeding. On the contrary, he had to consider, that in case of hemorrhage all means were in his hands to staunch it, and that the pain necessarily connected with such deep incisions would not be more violent than in various other operations. But it seemed obvious, that with the end of the operation all danger would not cease; and that he had to fear a subsequent bleeding, or, more than that, an intense inflammation of all the adjacent parts, even of the brain and its membranes; but this being of a traumatic origin, it might be prevented or removed by suitable means.

As he had to remove a disease which, if left to itself, might extend more and more, and even seriously endanger life, the deformity produced by this operation could scarcely be taken into consideration, so much the rather as the tumour itself actually produced a high degree of deformity, which would at all events be diminished by its removal.

Therefore, the danger and consequences of the operation were counterbalanced by the probability of a favourable result, and Professor Heyfelder consequently performed the total resection of the bones, in the presence of Professor Canstadt, Professor v. Siebold, Professor Ried, Professor Winterich, in the following manner:—

The patient was seated in an arm-chair; his head supported against the breast of an assistant, and fixed in this situation. The operator made two incisions from the outer angles of the eyes to the corners of the mouth, and pared all the softer parts away from the tumour to the inner angles of the eyes and the nasal bones. The flap thus formed being drawn upwards over the forehead, and the orbital margin being cleared down to the inferior ridge, he separated on both sides the juncture between the jaw and cheek-bone by means of a chain-saw introduced through the inferior orbital fissure. In the same way, the separation of this bone with the nasal bone was effected. Then the vomer and the other junctions still existing were divided by a bone forceps, and the soft palate separated from the hind edge of the hard palate. After that, pressure with a chisel upon the upper part of the tumour sufficed to dislocate the upper jaw-bones out of the principal junctions, and so to finish the operation. It lasted three-quarters of an hour, as three times fainting of the patient had necessitated rather long interruptions.

The loss of blood had not been extremely great, as torsion and compression sufficed to stop the bleeding during and after the operation.

We had before us a hollow, caused by the removal of the natural partition-wall between the mouth and nose, producing a very disagreeable impression.

The two long wounds of the cheeks were united with twenty-six insect-needles, and cold fomentations were applied. The man operated on was nourished during the first day by means of a syringe, with which he received broth and cooling beverages; the second day by means of a spoon; the third and fourth days he took fluids out of a cup. No extraordinary reaction appeared.

On the removal of the dressings on the fourth day, the cheek-wounds were found almost in all parts united; only in some places a superficial suppuration had taken place.

The thirteenth day after the operation, Schmidt was presented to the Physico-Medical Society at Erlangen; on the thirty-second day after that, he was removed home. No external deformity was to be seen, the two incisions having healed perfectly throughout. In the interior of the mouth could be observed a fissure thirteen lines long and three lines broad; the removed parts were replaced by a tissue, which seemed hard on the surface, but somewhat œdematous towards the fissure. The soft palate and uvula were, contrary to all expectations, in their natural position, and of a normal condition; the process of eating and drinking was unaffected; the speech was better, i. e. more intelligible, than before the operation; the nose had a more natural form, and was no longer as it had been heretofore, pulled upwards and pressed flat; respiration free, and sleep sound.

The pseudo-plasma, into which both upper jaw-bones were changed, appeared as a dense, hard, bacon-like tumour, rich in blood, in which, on microscopical examination, it was seen the cellular formation prevailed. Both jaw-bones were preserved in their contiguity, and in this form, though enormously enlarged, the preparation is kept in the anatomical collection of the Surgical Clinique.

Half a year after the operation the man was perfectly well, so that he even could work in the fields. But seven months later we received the information that a new pseudo-plasma was developed on his forehead, with excruciating pains; it increased rapidly, and occasioned his death in the month of October, 1845, fifteen months after the operation,

Case II.—George Lochner, aged 55, who never before had been seriously sick, was affected with cancer twelve years previously, on the right side of the upper lip, which increased slowly, and which was removed by the knife three years afterwards. During two years the man remained free of a relapse; but at the end of this period a wart-like little tumour arose near the cicatrix, which soon changed, with tormenting pain, into an open ulcer, which extended itself over the right side of the upper lip, over the nose, and over the palate.

When the patient entered the Surgical Clinique on the 21st of January, 1850, his state was as follows:—

A disgusting carcinomatous ulcer extended itself from the right corner of the mouth to over the greater part of the upper lip, and had already destroyed the right wing of the nose. In the same way the cartilaginous part of the lower division of the nose became attacked with the disease, so that the greater part of the upper lip, and more than half of the nose, presented an ulcerating surface, covered with fungosities, easily bleeding, and painful at the slightest touch.

The whole of the palatal arch was degenerated into a hilly, cancerous tumour, which extended itself equally over both upper jaw-bones, and to the insertion of the soft palate.

Some remains of the teeth stuck in the alveoli, and augmented the disgusting impression produced by the view of this patient; the more so as a suppuration, of a cadaverous odour, covered the ulcerating surface, and the patient showed the symptoms of a lengthened suffering, the body having wasted away, the complexion of his face being clay-coloured, and the features disfigured.

In order to save the man's life, the removal of the cancer was necessary; it had attained such a circumference, that the total resection of both upper jaw-bones, the excision of the greater part of the upper lip, and of all the cancerous parts, soft and hard, of the nose, seemed unavoidable—an operation that could not be done without deep incisions, likely to produce subsequently a great deformity. But in a case where we have to deal with preserving, or even with prolonging, life, we cannot take into account resulting deformity.

On the 21st of January, 1850, the patient having inhaled chloroform, the operation was performed in the same way as in the former case. But the soft parts of the face being destroyed a great deal by this loss of substance, the obtuse-angled flap was separated in two unequal halves.

The maxillo-zygomatic junction was separated at the left side by the chain-saw; at the right by Liston's bone-forceps.

The soft palate having been cut from the bone, the back union between the jaw-bone and the pterygoid process of the sphenoid was separated by a chisel introduced through the nose, and employed like a lever. In this way the operation was finished, and both bones could be taken away in pieces of various size. In order to stop the bleeding, the application of ice and the ligature of an artery were quite sufficient.

Immediately after the operation Professor Heyfelder united only the right cheek-wound; then the patient was put to bed, and restored by some broth. Three hours after, a rather important bleeding, from the left incision, took place out of the arteria coronaria, and did not stop until the wound became united.

The loss of substance produced by the resection of the degenerated parts of the nose and lip, Professor Heyfelder tried to cover by autoplasty. Nothing else was resorted to except cold local applications.

The first night passed quietly; the patient awoke refreshed by a long, deep sleep; but his face being swollen, and the parts near the sutures much stretched, the cold fomentations were replaced by tepid epithems of lead wash. The second night passed as well as the first. The fourth day a part of the sutures, on the fifth the rest of them, were removed. The cheek incisions were very well healed, but union in the median line had not succeeded.

The 18th of February, that is to say, the twenty-ninth day after the operation, the ununited parts of the wounds were completely cicatrized. In the inner part of the mouth cicatrization had also taken place. On the upper side of the perpendicular plate of the ethmoid bone, in the soft palate, a round aperture was to be seen. In consequence of the defect in the nose and lip, there was a narrow triangular fissure in the right half of the face, the base of which corresponded with the mouth, and the top spread to the root of the nose.

He was able to drink and eat soft nourishment pretty well; his speech was very unintelligible, but it improved a great deal as soon as the aperture of the palate, and more even when the outer fissure, were closed. With this patient, the same as with the former, we made the observation, that the soft parts of the face, though deprived of their essential support by the removal of both upper jaw-bones, did not collapse, and that in this way no deformity resulted. On the contrary, after a resection of one jaw-bone, the collapse of the skin is not to be avoided, as Professor Heyfelder's[a] nine cases, and those of others, have proved.

The microscopical examination of the tumour confirmed it to be cancerous.

From official communications we knew that the man had remained well during twenty months, but then the cancer reappeared, extended itself over the whole face, the eyes, the pharynx, and larynx, and he died on the 9th of December, 1851.

CASE III.—Johann Baptist Hieroth, aged 21, very thin, of a delicate constitution, but never seriously ill, suffered in the beginning of February, 1852, with vehement pains in the two last back teeth of the left upper jaw-bone, which became loose and were extracted. Nevertheless, the pain continued, matter came out of the two alveoli, and the alveolar process was exfoliated at this place. Three months later the hard and soft palate swelled, the man spoke through his nose; the pain increased to an intolerable degree. On the 28th of June, 1852, the patient entered our Clinique.

The hard palate was perforated in three places: in the middle, where the perforation was four lines in diameter; on the left side, where the two removed teeth had been; and on the right side, near the second upper back tooth. Out of these three openings flowed a nasty, discoloured, ichorous fluid; the probe introduced through these apertures touched granulating masses. The soft parts of the palate were loosened, ulcerating, and of an unhealthy aspect. An ulceration of the soft palate had destroyed almost all the uvula. This ulceration showed, in its form, secretion and edges quite the nature of a cancer, which was confirmed by microscopical examination.

Although there was no mark on his body, nor did his assertions allow us to think that he had suffered from a primary syphilitic affection, nevertheless, we made a cautious attempt to cure him with the decoctum Zittmanni[a]. The disease, however, did not improve; but, on the contrary, made rapid progress, so that after a fortnight the uvula was already lost, and the speech became quite unintelligible.

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[a] Amp. und Resect., pp. 29–57.

The malignity of the disease, its rapid progress over the surface, and in the deep tissues, the increasing waste and weakness of the patient, necessitated a rapid limitation of the disease, and justified the resection of both upper jaw-bones, which operation alone would suffice to remove all diseased parts. Perhaps the removal of the left upper jaw-bone, and the resection of a third of the right upper jaw-bone, would have been sufficient, but experience proves that partial resections are very apt to be followed by early relapses. Professor Heyfelder, therefore, undertook, on the 13th of August, the resection of both ossa maxillaria superiora, after the same preparation as in the former cases. His proceeding was the same as in Case I., with the exception that the union of both bones with the frontal and nasal bones was divided in one act. The needle conducting the chain-saw was introduced through the inner partitions of the orbital and nasal processes; the partition wall of the nose, the vomer, and the junction with the ethmoid bone, were sawed through. The soft palate being pared from the hard one, the operator, with the help of a chisel, tried to enucleate the bones, as in the former cases he had easily succeeded in doing. But this time it could not be effected till the union between both upper jaw-bones was separated with the chain-saw. Then the left one broke under the movements of the chisel, and could easily be taken away. Now we had room enough to separate, by means of Liston's bone forceps, the union of the right upper jaw-bone with the palate-bone, and the pterygoid process of the sphenoid bone, which, in this case, had been extraordinarily strong.

After the ligature of one artery, the bleeding was stopped by the application of the actual caustic, as neither ice nor the liquor Pagliari[b] had sufficed to stop it.

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[a] [DECOCTUM ZITTMANNI, *Prussian Pharmacopœia* (Compound Decoction of Sarsaparilla).—"Take of sarsaparilla, sliced, a pound; digest for a quarter of an hour, and then boil for half an hour, in twenty-four pounds of water, having previously added an ounce and a half of saccharated alum (equal parts of alum and sugar), half an ounce of calomel, and a drachm of prepared cinnabar, enclosed in a bag; towards the end of the boiling mix in three ounces of senna leaves, an ounce and a half of liquorice root, and half an ounce each of the seeds of anise and of fennel. Filter the decoction to sixteen pounds, allow it to stand for some time to deposit a sediment, and decant the clear liquid."—ED.]

[b] [See Dublin Quarterly Journal, N. S., vol. xiv. p. 502.—ED.]

In consequence of after-bleeding, the wounds were not united until four hours later, and cold fomentations were applied. No remarkable reaction took place, not even swelling of the face. During the first day the man received only broth, by means, first, of a syringe, then of a spoon. The fourth day, the ligatures being removed, the wounds were healed. The 25th of August, when dismissed home, he could eat almost everything, his speech was more intelligible, the face very slightly deformed. A year later we received from the government physician of his county the information that Hieroth was quite well, without any trace of disease within his mouth; the hollow produced by the operation being filled up with cicatrice tissue; that he seemed well nourished; that his speech had very much improved; and that he was occupied as a workman on a railway. Meantime, his face was so little altered, and his appearance so good, that nobody would have thought him to have undergone such a severe operation.

Dieffenbach[a], in 1848, performed a similar operation, in consequence of a large tumour of the face. He incised the soft parts in the median line, and removed the greater part of both upper jaw-bones, together with the palatine bones, and a part of the cheek-bone.

Maisonneuve[b], in 1849, totally removed both ossa maxillaria superiora, following the same method as Dieffenbach as regarded the cutaneous incision. The operation was for a case of cancer; the man operated on died a few days after.

Maisonneuve[c], in 1850, performed the same operation upon a girl, who had long been employed in a phosphorus match factory: the subcutaneous extraction of both the upper jaw-bones, mortified by necrosis.

Similar operations have been performed by Dietz and Jüngken[d]; the latter separated both bones in their median line with the bone-forceps of Liston. Both operations had good success.

Langenbeck[e], in 1853, in a case of a medullary carcinoma, removed both upper jaw-bones, excepting only the orbital plate of the left one. He divided the skin on the right side, by one oblique incision through the cheek; on the left by a combined incision in this form Λ. The bones were separated by means of a metacarpal saw, a bone-forceps, and a chisel.

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[a] Operative Chirurgie, T. ii. p. 46.

[b] Gaz. des Hôp., 1850, Nos. 97 and 100, and Oscar Heyfelder, Klinischer Bericht in der Prager Vierteljahrshr., Bd. xxi.

[c] Gaz. des Hôp., 1850, p. 510.

[d] Deutsche Klinik, 1850, p. 48.

[e] Deutsche Klinik, 1853, p. 204.

The indications for the removal of both upper jaw-bones result from the same diseases as those for the resection of one; only they must be extended over both bones.

Necrosis and caries of both upper jaw-bones, where no signs of a tendency to cure are visible, but where the whole state of health, or even life, is endangered, require an operation, and, if extended over the greater part of the upper jaw, *the resection of both bones.*

Benign tumours, whether they originate from the maxillary sinus, or from the substance of the bone, may, by excessive increase, produce deformity, derangement of the physiological functions, and even danger to life; and, therefore, their removal may be necessary. They require the resection of both upper jaw-bones if the entire or the greater part of the bones are diseased, or connected with the tumour; or if the tumour itself cannot be removed without extirpating the bones. *Enchondroma* and *osteosarcoma* give the most frequent occasion for this operation.

Malignant tumours, occupying both bones, permit only a partial resection, if limited to the free edges of the bones, for instance, of the alveolar margin. As partial resections of the upper jaw in case of more extended malignant tumours prove to be generally followed by early relapses, the total removal of the bones is, in this case, to be preferred to a partial operation. All the different kinds and forms of cancer have been observed to occupy the upper jaw, and have demanded the extirpation of one or both bones: the *epithelial cancer*[a] (the cancroid of Virchow), the *cancer gelatiniforme*[b], the *carcinoma medullare*[c], the *cystocarcinoma*[d].

The *contra-indications* are:—1. An excessive extent of the disease, so as not to be totally removed, especially if the base of the skull is equally affected, and if the disease is of a malignant character. On the contrary, superficial connexion of benign tumours with the periosteum of the base of the skull does not contra-indicate the operation, as is proved by experience. 2. Cancerous deposition in other organs. 3. Dyscrasy being connected with the local disease, as scrofula, syphilis, &c.

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[a] Michon, Gaz. des Hôp., 1853, p. 178; and Soulé, Gaz. des Hôp., 1854, p. 46.

[b] Maisonneuve, Gaz. des Hôp., 1852, p. 139.

[c] Heyfelder, Resect. u. Amp., pp. 30, 33, 34, 37, 50, 57–67.

[d] Heyfelder, ibid., p. 42; and Klinischer Bericht, 1853–54, p. 21.

THE OPERATION.—The proceeding is analogous to the extirpation of one upper jaw-bone, and not at all more difficult than this, the separation of the median junction being unnecessary in the greater number of cases. It consists, essentially, of two acts. The first is the denudation of the bone from the soft parts; the second, the excision of the bones from their osseous connexion.

Act I. DENUDATION OF THE BONE.—The soft parts may be cut by simple or complicated methods. The simple are more used, and, if possible, to be preferred to the complicated:—

1. *The median incision*, followed by Dieffenbach and Maisonneuve, commences from the root of the nose, and ends in the middle of the upper lip. If necessary, a second incision from the beginning of the first to the inner corners of both eyes, must be added. In this way we obtain two lateral flaps, which are pared closely from the bones, and held on either side with blunt hooks. By this proceeding the fewest vessels, nerves, and muscles are cut, and the cicatrix produces but little deformity, although it affords room enough to perform the operation.

2. *The posterior lateral incision, or cheek incision*, employed by J. F. Heyfelder in his three cases, begins on each side from the outer corners of the eyes, and finishes at the angles of the mouth; or, to avoid the ductus Stenonianus in the upper lip, some lines within the corner. By this incision, a large flap is obtained, with the base above. This gives more room than any other of the simple methods, but it has the disadvantage of exposing the facial nerves, the principal vessels of the cheek, the ductus Stenonianus, and a great number of muscles, to the knife.

3. *The anterior lateral method* would consist in two incisions, beginning at the inner corner of the eye, and descending near the wing of the nose to the upper lip. Hitherto it has not been practised upon the living, except on one side. But, from my experiments on the dead body, it would appear to be well adapted for both sides. This and the former methods may be usefully combined on the different sides.

In the rare case that these simple proceedings would not suffice to denude excessively enlarged bones, the complicated method must be employed on one or both sides; it was practised by Malgaigne, Syme, Jaeger, Lisfranc, Blandin, Fergusson, and others, for the resection of one upper jaw-bone.

Instead of the crucial and flap incisions, which always expose the soft parts a great deal, and produce much deformity, J. F. Heyfelder proposes for those cases, where the simple methods do not suffice, the following proceeding:—One incision slits the under lip in the middle, and proceeds to the chin; from thence a second and third incision extend themselves on both sides along the under edge of the mandibule, and the hind edge of the ramus ascendens. By this method the nerves and Steno's duct are preserved, and the cicatrix falls where it may easily be concealed—in men, by a beard, in women, by a handkerchief.

The soft parts being cut through, they are pared from the bones, preserving, if possible, the periosteum on that side, and the flaps thus formed are held back by an assistant.

Act II. The Excision of the Bones.—We commence with the separation of the maxillo-zygomatic juncture on either side, which is best effected by the chain-saw. The introduction of the needle and chain-saw in the inferior orbital fissure, and the advance of the instruments behind the zygomatic bone, is imagined as the most difficult part of the operation; and some German and French authors were inclined to ascribe this difficulty to the narrowness of the fissure (Ried, Heyfelder, Chassaignac, Lisfranc, Roux, De Brignolles). But after measuring sixty fissures, I have found that their anterior opening is usually widened (*sinus fissuræ orb. inf.*), and shows a medium breadth of 2⅓ lines, which affords space enough to introduce an ordinary needle. Even in case of disease of the upper jaw, the bony edges forming the inferior orbital fissure, if attacked by the disease, are oftener destroyed and thinned by pressure, osteoporosis, or caries, than thickened and covered with osteophyts.

The real difficulty arises from two different reasons:—1. Operators usually choose needles too little curved, so that the point cannot protrude below the cheek-bone, as the head of the needle is approached to the inferior orbital margin; or their needle is provided with too sharp a point, which often engages itself in the periosteum, and even in the substance of the bones. 2. The needle, which is held but very loosely by the operator, is apt to turn between the fingers and to follow a false direction; so that he is often obliged to withdraw and reintroduce it several times.

To avoid this difficulty, I use a very curved needle, forming about two-thirds of a circle, with 7-8 in. semidiameter, having no sharp point, and introduce it by means of a pincers, constructed for this purpose. The extreme ends of the pincers have, on the inside, a little groove corresponding to the four-cornered head of the needle, so that it can be fixed in the ends of the pincers, and thus be introduced in the direction intended. By means of these very simple instruments, the introduction of the chain-saw behind the maxillo-zygomatic junction has always succeeded with remarkable facility.

The separation of the upper and posterior connexions is the same as with the resection of one upper jaw-bone; only the two upper jaw-bones may be disjointed from the frontal and nasal bones by one act, according to a proposition of Maisonneuve, executed by J. F. Heyfelder in his fifth case.

The vomer, as well as the union of the maxillary bone with the cribriform bone, is cut with a bone-forceps. At this part of the operation the soft palate is cut from the hard one by a small knife, the blade being conducted in a flat manner.

The dressing and after-treatment do not differ from the same after the resection of one upper jaw-bone. Our method of not closing the wound until some hours after the operation, to avoid the necessity of opening it again in case of after-bleeding, is always successful. The union was effected by the suture nodosa, or circumvoluta, or by *serres-fines;* the latter can only be employed upon parts which have no tension.

The success of the operation must be called good. The wound in the soft parts usually heals by the first intention, within four or five days. It is astonishing that even with this extirpation the loss of substance is almost completely filled up by granulations, and any openings that may remain can be closed with an obturator. Speech becomes by-and-by more intelligible; the senses of seeing, hearing, smelling—sometimes lost from the pressure of the tumour—return, sooner or later, after the operation; the faculty of eating even substantial meats is re-acquired; and the deformity is very slight.

Of nine that were operated on, four died; in one case the final result is unknown; in four it was successful. One of the patients seems to have succumbed to the operation, that is to say, the first operated on by Maisonneuve; one died from an apoplectic seizure—that was the man operated on by Dieffenbach; two (Nos. 1 and 2 of those operated on by Heyfelder) succumbed to a relapse of cancer, but one not until fifteen, the other twenty-three, months after the operation;—which relapses appearing after such a length of time, the result cannot be called otherwise than successful.

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Art. VI.—*Cases of Vesico-vaginal Fistula; with Remarks.* By Maurice H. Collis, M.B., F.R.C.S. (by Examination); Surgeon to the Meath Hospital; Lecturer on Surgery, Dublin School of Medicine.

It does not need any remarks of mine to impress upon the surgical profession the necessity of cultivating any branch of practice that tends to alleviate suffering, and to restore the miserable and forlorn to comfort and to society. The unhappy lot of those females who are the subjects of vaginal fistula is proverbial. Shut off from society, if they are rich; and in constant pain and anguish, if they are poor; subjects often of loathing to their friends and to themselves—I know no beings so much to be pitied; and when to this we add, that it is not the old and decrepid, those whose race is well nigh run, but the young, and often the beautiful, that are thus afflicted,—I have said enough to show that in this country their case should have received more attention than it would appear to have done if we were to judge by a search among the medical periodicals of the last thirty years. With the exception of the chapter in Dr. Churchill's "Observations on the Diseases incident to Pregnancy and Childbed," little note has been taken of what may have been done in Ireland for the surgical treatment of such affections, although I am aware that many isolated cases of cure have occurred in the practice both of Dublin and of country surgeons. Still, so unsatisfactory have been the results in the vast majority of instances, that operative interference has till lately been looked upon as almost hopeless. Something has been done in the last year to remove this impression, and as the best means of assisting further in doing away with it, I purpose to give in the present paper the results of six cases which were operated upon within the past twelve months, and which came under my observation.

The causes of vesico-vaginal fistula, as given by Dr. Churchill in his valuable work, and modified by Mr. I. B. Brown, are as follow:—

"1. The wall of the vagina may be wounded during criminal attempts to procure abortion.

"2. Retention of a pressure within the vagina, inducing inflammation and subsequent ulceration.

"3. The long impaction of the head of the child in the pelvis during labour, by pressure inducing inflammation, ending in ulceration (sloughing?) and perforation.

"4. Careless or improper use of instruments in attempting to deliver, especially if the bladder be not empty.

"5. Corroding cancer of the uterus or vagina may perforate the bladder.

"6. Stone in the bladder is sometimes a cause, from the bladder being pressed between the head of the child and the stone within."

By far the greater number of cases results from the third and fourth of these causes; and as my experience is limited to such cases, whatever remarks are made in this paper must be taken as referring to them alone.

There seems to be a difference, while the affection is recent, in the condition of the edges of the fistula, according as it results from sloughing or from an incised wound. In the latter the edges are regular in outline, pliable, and of even thickness. In the former, owing to loss of substance, they partake of more or less of the character of a puckered, callous cicatrix. The difference is of importance as regards the cure, for which it is essential to have an abundance of areolar tissue, well supplied with vessels. The absence of this healthy tissue is a main cause of the failure of operations; we see this in all old fistulæ; the urine constantly flows over their edges; and, by keeping up irritation, renders them thick and callous; hence, not only do the stitches tear out, but the semi-cartilaginous margins refuse to unite by the first intention. The coexistence of a tough cicatrix and of cartilaginous infiltration is well seen in the form of fistula that is situated close to the neck of the uterus, and which is generally the result of sloughing from pressure of the head.

The fistula I allude to is small, seldom larger than the urethra in diameter, and is situated at the very lowest point of the fundus of the bladder, so that not only does every drop of urine pass through it, but, in addition, the current is incessant, as the bladder cannot retain a drop. Every one conversant with these cases has seen them resist every variety of treatment, often reduced to a mere point by cautery, and refusing to close. These fistulæ have hitherto been seldom closed by suture. In one of my cases, this portion remained unclosed, although the remainder of the rent, a long one, united readily by the first intention; the edges were thin and supple anteriorly, but about this portion were thick and callous, and, while the stitches held well elsewhere, they sloughed out rapidly here.

When the fistula has existed for any length of time, its edges almost universally take on an unhealthy condition; the exceptions are where the fistula lies far forward, and is only at intervals irritated by the passage of urine. The period at which this alteration occurs will vary in almost every case. I do not think that any perceptible induration will be found sooner than three months after the injury. This period is, therefore, most suitable for operation, as adhesion will be more readily obtained between the edges. Another reason for selecting an early period is the condition of the bladder and urethra. These soon lose their capacity for dilatation when they are not in use, and offer powerful obstacles to the cure of the fistula; the bladder may also be prolapsed in various degrees, and become an additional source of misery to the unfortunate patient. Other complications may exist, such as adhesion of the walls of the vagina, and narrowing of this passage from sloughing of its walls. Such adhesions require to be treated with great caution, as severe inflammation sometimes follows the division of them. In one case I divided an adhesion of this kind distant an inch from the vulva, and the operation, though apparently trifling, was followed by rapid and fatal peritonitis. Examination at the time, and afterwards, showed that the incision was not within two inches of the peritoneum, and that the inflammatory action had commenced in the unhealthy, ill-organized tissue of the cicatrix, and had spread to the uterus and peritoneum. The patient was a strong, healthy countrywoman, apparently a most unlikely person to be so attacked; the incision was made preparatory to an operation for the closing of a large gap in the floor of the bladder.

Various operations have been suggested for the closure of fistulæ, and put in practice with variable success. Many of these will be found described in Dr. Churchill's book; others in Pancoast's Operative Surgery, or similar works. The principal points in which they differ from one another are the mode in which raw surfaces are obtained, and the kind of suture adopted. Every succeeding operator endeavours to improve on those who have preceded him in one or other particular, and most of them have exercised their ingenuity to devise instruments for facilitating the execution of both: as regards instruments, the simpler the better. Brass spatulæ, made strong, and bent at a right angle, so that the portion to be inserted into the vagina shall be about three or four inches long, and less than an inch wide (as suggested by Dr. Sawyer), will be found

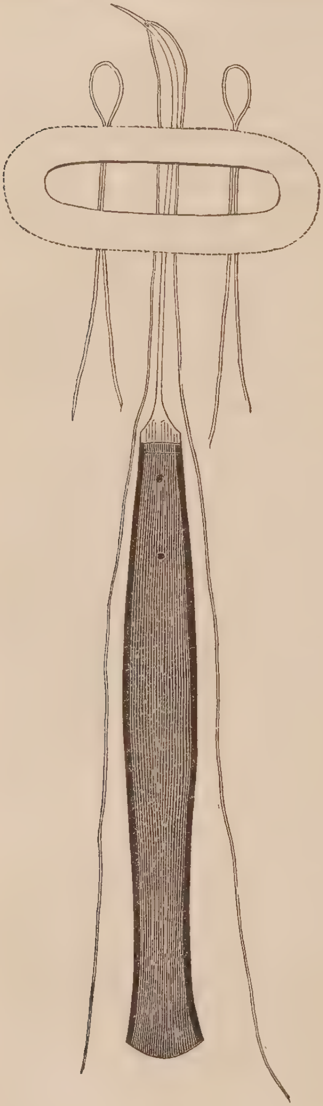

Fig. 1.

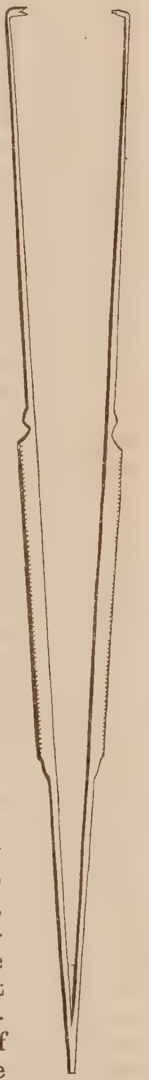

Fig. 2.

the best means for bringing the fistula in view. One of these will be required for each side, one to depress the fourchette, and a fourth sometimes to raise the urethra. A staff in the urethra will often answer better than the fourth spatula, and its point may be made useful to draw the bladder out of the way if its upper wall be prolapsing, or to push forward the anterior lip of the fistula. The best position for operating will, generally, be that for lithotomy. I have, however, in two cases found it easier to get the parts into view and into reach by placing the patient standing in front of a table, and bending forward on it, so as to have her body at right angles to her legs; in this, by slightly separating the legs, the parts were brought into view from behind by the aid of the dilators. The other instruments required are a long, straight knife; a common fixed needle, as shown in Fig. 1; a long pair of ordinary forceps with toothed points, Fig. 2. With these, and good assistants, there will be no difficulty in paring and stitching any part of the vagina. If the surgeon have a spear-pointed knife, slightly bent on the flat, an inch or so from the point, it will be a little easier to operate on the edges in the way I shall describe presently; but I have found a long, straight bistoury answer very well.

The mode of obtaining a raw surface which I adopt is different from the usual plan of paring off a slip of membrane all round the fistula. It was suggested to me by Mr. I. B. Brown's method, and by that of Professor Pancoast of Philadelphia. The former pares away the mucous membrane from the margin of the fistula, and also from the surface of the vagina, all round it, to an extent of three lines; by this means he gets an extensive raw surface, part of which is pretty sure to unite. Dr. Pancoast's plan is to split the posterior border of the fistula to the extent of half an inch, and to pare the anterior into a wedge-shaped tongue; this tongue is then inserted into the groove made by the splitting of the posterior border, and four raw surfaces are thus brought in contact. The plan that suggested itself to me in my first case was, to split the entire margin of the fistula all round, and to the extent of three or four lines or more, and to open out the flaps so as to bring the raw surfaces of the opposite sides of the fistula to face each other. Fig. 3 represents in outline a section of the splitting of the margins.

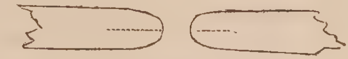

Fig. 3.

A sufficient number of sutures are now inserted in the manner represented in Fig. 1. The dotted line shows the extent to which the margin is split. It is easy to pass the sutures; the needle is threaded with a long thread, and thrust through the anterior flap; so that its point comes out at the centre of the flap; it is then pushed on through the posterior flap, entering, of course, on its raw surface opposite the point of exit in the anterior flap: the loop of the ligature is seized by the forceps and held tight while the needle is withdrawn: we thus have a double ligature passed with the loop hanging out beyond the posterior flap, and the two ends hanging out in front of the anterior; when a sufficient number have been passed, a quill of bougie or India-rubber cord is passed through the loops; the ends are then carefully pulled until the quill lies in its proper place; the two ends of each ligature are then tied successively over a second quill, as represented in Fig. 4. Fig. 5 is a sectional view, meant to represent the relative position of the raw surfaces, the quills, and ligatures.

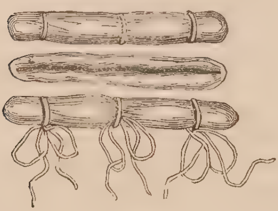

Fig. 4.

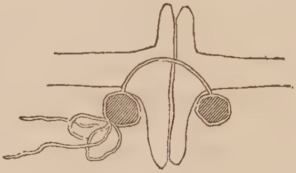

Fig. 5.

A few points require to be noticed further:—

1st. The splitting of the flaps is incomplete unless it be continued into healthy areolar tissue; the ill-organized cicatricial tissue will probably ulcerate under the inflammatory process.

2ndly. Judgment is required in placing the ligatures at a proper distance from each other, and from the edge of the fistula; if the flaps are in a perfectly healthy state, about a third of an inch should intervene in both cases; but if there is much infiltration of the flaps, the interspaces must be greater.

3rdly. The ligatures must not be tied too tight; allowance must be made for tumefaction, or the parts will slough, especially if the quills used be at all rigid. I am indebted to Dr. Thorpe, of Letterkenny, for suggesting the use of India-rubber cord in place of pieces of bougie; its elasticity prevents strangulation, and at the same time insures coaptation of the flaps, and is peculiarly suited to irregular fissures.

4thly. The time for the removal of the ligatures will also vary: in unhealthy structures they will commence to cut out in forty-eight hours; while they will hold five or six days, or even longer, in that which is healthy.

5thly. It must be borne in mind that all urine should be got rid of as soon as secreted, and a catheter must consequently be kept in the bladder. Either Marion Syms' S-shaped silver catheter, or a male gum-elastic will answer this purpose, and it should be occasionally examined to see that it is permeable. After three or four days' use of the catheter, the urethra will remain patulous, and the catheter may be removed if it become clogged; the frequent removal of the catheter for the purpose of cleaning it being more likely to do mischief than its disuse.

6thly. It will be found that the inner or vesical flaps are more sure to unite than those included in the ligatures. This should be particularly borne in mind in the selection of cases for operation. It will also account for the failure of many well-executed operations, more especially of those in which simple paring of the edges is resorted to.

There is no necessity to dilate on the advantages of any plan of operating which gives a double chance of union. The statistics of my operation are as follows:—It was performed in 6 cases: the first and second were complete cures; the third was reduced from 3 inches to ¼ inch; the fourth was half closed; the fifth and sixth were failures. I operated myself in Cases i. and iii.; Dr. Sawyer operated in Case ii., which closely resembled my first case; Dr. Thorpe in Case iv.; and two other surgeons in Cases v. and vi. Further details of Cases i., iii., and iv. will be found further on. I assisted personally in all the cases except Dr. Thorpe's; and, I may say, in his, by letter. Case i. was published in the Dublin Hospital Gazette for June 15, and I shall consequently only give an outline of it, more especially as Dr. Thorpe's description of his case explains the plan of operating adopted in both cases, with the greatest accuracy. The causes of failure in Cases v. and vi. were unhealthy flaps, which took on at once the ulcerative process. Both fistulæ were small and puckered. In similar cases I would adopt or advise the plan practised by Mr. Bozeman, an American, an abstract of which will be found in the Dublin Hospital Gazette for Oct. 15. A case successfully treated in this manner, by Mr. Baker Browne, has lately appeared in the Lancet, with ample illustrations. The principal improvement of Mr. Bozeman is the use of a slightly concave shield of silver, a little larger than the fistula; the wire sutures are passed through holes in this shield; they are then secured with shot in the manner recommended originally by Mr. Maclean, of this city, and practised by Sir Philip Crampton in a case of cleft palate.

The perusal of Mr. Bozeman's pamphlet has made me aware that I cannot set up any claim to originality for the plan of splitting the margin of the fistula. It was anticipated in 1839, by Dr. Hayward, of Boston, who, however, threw it aside, not apparently appreciating its advantages in certain cases.

Case I.—Mrs. Giblin, age 25, healthy and well formed, confined of first child in the end of February, 1856; seventy hours in labour; pains strong; child's head large; was seen by a surgeon after thirty-six hours of labour, when her bladder was emptied by the catheter; delivered without instruments; incontinence of urine not remarked till she got up on the tenth day. She came to me in March; I found a transverse rent two inches long, situated 1¼ inch from the meatus, and severing the urethra from the bladder; the aperture into the bladder admitted the tip of the little finger. I operated on the 31st of March, with the assistance of Drs. Jameson, Hudson, and Churchill. The operation was performed in the way described above, the woman standing, with her back to me, and leaning on a table. The steps of the operation need not be again detailed; it occupied thirty-five minutes, was not painful, and chloroform was not required. As the after-treatment is of importance, I will describe it at greater length—it is that laid down by Mr. Syms and Mr. Browne:—The patient was lifted into bed, and laid on her face, the ends of the catheter being placed in a vessel to catch the water as it passed; two grains of opium were given at once, and one grain every third hour until the evening; after this, one grain was given morning and evening, and the bowels were thus kept perfectly at rest until the seventh day; moderate nourishment was allowed; she was placed on her right side after forty-eight hours, and a fresh catheter introduced. On the 4th of April (the fifth day after operation) I removed all the ligatures, as I found them giving rise to slight suppuration. The parts seemed to lie in perfect contact. The vagina was syringed with cold water two or three times this day. On the next I slightly touched the margins of the wound with nitrate of silver, and gently plugged the vagina with soft sponge. On the 6th of April I removed the sponge and catheter, and, as the parts were perfectly healed, and the bowels had been gently moved in the morning, I allowed her to get up and go about a little. On the 9th she was examined by the gentlemen who assisted at the operation, and on the 18th by Dr. Beatty, and all were satisfied of her cure. I also tested the cure by injecting water into the bladder, and checking the flow of it from the urethra. She rapidly regained power over the urethra and bladder; and I have only to add, that from subsequent examinations, and letters received from her, there is no doubt of the cure being permanent, as well as complete.

Case III.—Ellen Balfe, aged 40, healthy, well-developed pelvis, consulted me in September, 1856, for an extensive rent in the bladder, with prolapse of the bladder externally. She suffered severely, and was unable to walk, or even to stand or sit, without pain; the only position in which she found relief from pain was crouching down. The history she gave was, that, eighteen months before, she had a prolonged and difficult labour (sixth child), and after four days was delivered by the forceps; that for six months more she was confined to bed, with sloughing and inflammation of the vagina, and incontinence of urine. I found a rent three inches long, running obliquely back from left to right, and beginning an inch from the meatus, and ending close to the cervix uteri; the bladder prolapsed through this, and the left ureter was seen half an inch from the posterior of the wound, slowly and irregularly discharging the urine; the prolapsed surface was fiery red, villous, and secreting pus and mucus abundantly. The edges of the anterior part were healthy, and not puckered or depressed; the posterior angle was different, much thickened, and infiltrated, and callous to the touch; the bladder could readily be returned, but handling it gave pain, so great that chloroform was deemed essential to enable her to bear the operation. I operated on September 24, in the same way as described, except that the position of the patient was that for lithotomy. This operation was performed in the Meath Hospital, with the assistance of Dr. Churchill, Dr. Sawyer, and Dr. Johns, in addition to some of my colleagues. The patient was carefully kept under chloroform by Mr. G. H. Porter from first to last. The dissection of the flaps was made with great rapidity round all the margin, except the posterior angle; here I found some difficulty, both from the toughness of the structures and from the close neighbourhood of the os uteri; it was not easy to make out enough of flap just here, and the event proved this was the only weak point in the operation. The quills followed the oblique line of the rent, and their anterior ends were allowed to project clear of the vulva; seven points of suture were required. I was uneasy about their posterior ends, which rested against the os uteri, and which I feared would produce ulcerative inflammation; however, there was no help for it, and I felt that I should be satisfied if any more than half of so extensive a rent were closed by the first attempt. A catheter was introduced, and opium freely given; the woman, being large and heavy, was placed on her left side, with her knees and thighs a little bent, and a pillow between them. On Friday, September 26 (third day), I cut two ligatures to prevent strangulation, but did not pull them out. On Sunday (fifth day), three more were cut. This morning the catheter got blocked up for an hour, when she suffered some pain in the bladder, until the water began to come away by the side of the catheter. Monday it got again blocked up by mucus, and as it was likely to do more harm than good, I removed it entirely. Wednesday (eighth day), I cut the remaining ligatures, and removed all. I did not care to examine too minutely, but felt satisfied that union had taken place through all but the posterior angle, where urine was making its way through. Subsequent examination proved this, and showed me that the most solid union occurred, not in the vaginal flaps, which were included between the quills, but in the vesical, which were not included in the stitches: fully a fortnight elapsed before the vaginal mucous membrane was completely healed. This patient left hospital for the country, promising to return to have the small aperture closed (if possible). I have since heard from her, and she reports herself so well that I doubt if she will return; her great suffering was from the prolapse of the bladder, and as this is completely relieved, it is very likely that she will learn to bear the lesser evil of incontinence of urine, rather than run the chance and suffer the inconvenience of a second operation.

CASE IV. occurred in Dr. Thorpe's practice; he had the patient under his care at the time my first case was published in the Gazette. My success led him to try my plan of operating, and though the case is not yet completely cured, the following description, from his pen, will be found interesting and instructive.

" Mrs. H——r, a short, stout-built woman, with well-formed pelvis, aged 33, was delivered of her second child in May last; labour was concluded in eighteen hours, without the use of instruments. After delivery she suffered from some pain and difficulty in making water, which, in a few days, amounted to complete retention; for some time the catheter was had recourse to, when the retention ended in incontinence, and she became totally unable to retain her urine, which dribbled away continually, excoriating the labiæ, inside of thighs, &c.

"I was requested to see this patient in the middle of June, one month after delivery. On examination I found the vagina hot, painful, and excoriated; just beyond its entrance lay a soft substance, like a slough, which I immediately removed; this, when floated in water, proved to be part of the fœtal membranes,—fetid, rough, and infiltrated with particles of calcareous matter deposited from the urine. The vesico-vaginal septum, just behind the neck of the bladder, presented an opening of an oval form, through which a catheter, introduced from the urethra, entered the vagina; this opening freely admitted the index finger into the bladder, and might measure about an inch from before backwards, and three-quarters of an inch from side to side; its margins were rather soft and granular, and thicker behind than in front. To mitigate present symptoms

I directed mucilaginous injections, and an ointment containing a solution of acetate of lead to be applied to the excoriated parts, opium to procure sleep, and mild aperient medicines to free the bowels. In eight or ten days she felt much relieved; the tender and exquisitely painful condition of the vagina had partially subsided, and she willingly submitted to the operation, for the particular directions regarding the performance of which I am indebted to you.

"I operated on the 30th of May; I was assisted by Dr. Cannon, and was also fortunate to obtain the able help of Dr. Little, of Lifford. The patient was placed upon her back, as in the operation for lithotomy; this position, after the trial of others, was found the most convenient; the vagina was dilated, and the perforation brought into view by two tongue depressors, introduced one at either side, and a retractor made of blocked tin posteriorly towards the fourchette; this contrivance was found more efficient than any form of speculum. A female catheter introduced through the urethra served more distinctly to define the opening, as well as to lift out of the way the upper wall of the bladder, the lining membrane of which, having a fungous appearance, tended constantly to project into the vagina. A substantial flap, consisting of the mucous membrane of the vagina, and a portion of the subjacent fibrous structure, was dissected up, to the extent of half an inch, all round the fistula, the edge of which was seized and kept tense during the dissecting process, by the long slender forceps made for the purpose. This part of the operation, although tedious and troublesome, was not very difficult. The chief annoyance proceeded from a pretty smart bleeding, by which the parts were frequently obscured. As soon as the hemorrhage ceased, the curved needle, armed in the usual manner, was passed from before backwards, so as to convey successively three double ligatures through the vaginal flaps, the portions of which, corresponding respectively to the anterior and posterior half of the circumference of the fistulous communication, were pierced each at three points. Whenever the extremity of the needle carrying the loop of each ligature was seen behind, the latter was seized with the forceps, and the needle withdrawn. Consequently, the front segment of the membranous flap contained the free ends of the silken threads; and the other, or posterior division, was traversed by their replicated or looped extremities; through these a piece of bougie, an inch and a quarter in length, was passed, when the free ends of the ligatures were tied over a similar piece in front, thus bringing the raw surfaces into effectual contact. When the operation was completed, that portion of the vaginal wall which had been dissected from around the abnormal perforation was converted into anterior and posterior flaps, continuous with each other at either side, the line of union being transverse; and it may be inferred that that portion of the floor of the bladder, immediately around the opening, and from which the vaginal membrane had been dissected inferiorly, formed *a vesical or upper flap*, the portions of which must have been disposed of in a manner nearly similar to the inferior or vaginal,—forming anterior and posterior segments, with fresh surfaces regarding each other, but of necessity less closely applied than the corresponding divisions below, and producing by their juxtaposition a transverse ridge, projecting upwards into the cavity of the bladder, crested by the edge of the fistula: thus the raw surfaces confronting each other were very extensive. The performance of the operation occupied better than half an hour. A piece of gum-elastic catheter, No. 10, was retained in the bladder in the usual manner. The patient was placed in bed, resting upon her knees, with her face downwards, and this position she constantly maintained for four days. As her bowels were freely moved on the previous day, she was directed one grain of opium every fourth hour; and before leaving her it was ascertained that the urine dropped with freedom from the extremity of the catheter.

"May 31st. The catheter, it is evident, has not properly served its office of carrying off the urine, as the latter now flows along its sides more freely than through its canal, which appears partially obstructed by mucus. Upon being withdrawn, it was found bent in such a manner as almost to close the opening near its point; this effect was produced by the uterus, which, from the position of the patient, must have fallen forwards, and pressed against it. Another and a stronger portion of gum-elastic catheter was introduced, so as to rest with its extremity just beyond the situation of the suture, and retained in situ with tapes and circular belt around the waist.

"June 1st. Urine appears to flow through the instrument guttatim, and with freedom; nevertheless, a small quantity trickles into the vagina between the sutures; this is evident from the ammoniacal smell of the vaginal mucus. The index-finger, cautiously introduced, discovers the two portions of bougie lying parallel, and in situ; the membrane included between feels swollen and puffy.

"2nd. Urine escapes partly through the catheter, and partly into the vagina between the sutures. A speculum was introduced, with the view of ascertaining more particularly the state of the parts; the central part of the flap between the bougies presented a grayish, sloughy appearance; the remaining portions, at either side, were of a dark colour, and swollen. I cut the middle ligature, and removed it.

"3rd. Scarcely any urine passes through the catheter; it enters the vagina as before the operation, through the fistula. The two other ligatures were cut, and the bougies removed; the catheter being now useless, was dispensed with, and the patient was permitted to sit up, and assume whatever position she pleased.

"7th. I instituted this day a particular examination: the opening appears widened to one-half its former dimensions; it is still rather oval, but its long axis now lies from side to side. From this date I lost sight of the patient until the middle of July, when the opening just admitted the index-finger into the bladder.

"In the beginning of August I applied the actual cautery to the edges of the opening, and the iron has since been employed on three other occasions, with the effect of slightly narrowing the fistula, which, nevertheless, still permits the entire of the urine to escape through it, into the vagina. I regret now that I did not at the proper time perform a second operation, as the cautery has so far disappointed my expectations.

"The chief difficulties attending the operation are two in number:—1st. To draw the ligatures sufficiently tight to maintain the raw surfaces in close apposition, without strangulating the flaps. 2nd. To provide for the uninterrupted discharge of the urine through the urethra until complete union has been effected.

"With the view of obviating the first-named difficulty, I would suggest, in place of quills, or portions of gum-elastic bougies—the common wax bougie is quite too soft—the use of cylinders of vulcanized India-rubber, or some other elastic substance, made sufficiently inflexible by a central axis of more firm material; these would yield slightly to the ligatures, and permit the intumescence of the flaps without acting injuriously by too much counter-pressure. Indeed, the knotting of the ligatures, which is a difficult and most important part of the operation, might be altogether dispensed with by the employment of small, hollow cylinders of flexible matter, which, when passed over the ligatures up to the suture, could be flattened by slight pressure, so as to retain their hold. In this manner the amount of pressure could be accurately determined and kept up by shifting slightly the position of the cylinders, if found desirable or necessary.

"The other difficulty alluded to might be overcome by employing a large canula made specially for the purpose, just long enough to pass beyond the situation of the suture, without hitching against the uterus, as this organ, it must be recollected, from the position the patient is compelled to assume, leans considerably forward. The instrument, moreover, should be furnished with rings, to permit of its being attached by ligatures to the edges of the nymphæ at either side. This would prevent the possibility of displacement, and the threads could be removed with the canula in a few days; the slight additional pain is a circumstance of little moment."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Traité d'Anatomie Topographique Médico-Chirurgicale. Considérée Spécialement dans ses Applications a la Pathologie, a la Médecine légale, a l'Art obstetrical, et a la Chirurgie opératoire. Par J.-E. PETREQUIN, Ex-Chirurgien en chef de l'Hotel-Dieu de Lyon. Deuxième Edition. Paris: Masson. 1857. Royal 8vo, pp. 763.

IN those earlier periods of literature, when the art of writing or expressing our ideas in graphic characters was regarded with a species of superstitious respect and veneration; when years of toil and unremitting perseverance were commonly devoted to the finished execution and complete embellishment of a single production; when that mysterious, but inherent, longing after immortality, led the sage, the philosopher, and the poet to consume successive hours in solitary isolation, retouching each sentence which, perhaps, months previously had crept into existence, the offspring of his teeming brain; when, unshackled by the perplexities resulting from other and more importunate avocations, too often involving the very question of actual existence, the author could find ample time for alterations, emendations, and improvements; when the fierce rage of competition, which marks the present era, was either totally unknown, or at least confined to the initiated few; when emulation might be said barely to exist, but devoid of the power of burning with too great an intensity, from a paucity of material to minister to its flame; when the spirit of the age was opposed to the propagation of opinions crudely formed, and as hastily promulgated amongst the mass of mankind;—we can gather from the records of the past, that men were content to throw aside for a time the mantle of the author to assume the garb of the cold and calculating critic over their own most favourite works; and that they executed this self-imposed task faithfully and righteously, may be clearly estimated from the force, brilliancy, and feeling that are displayed in those productions which, amidst the wreck of ages, have come down to us, models of composition, which may be imitated, but never can be surpassed.

Experience has, however, shown us, that in the present day very little reliance can be placed on this system of self-criticism, for whether it be the natural result of a want of sufficient time and reflection bestowed on the subject under consideration, or whether it may originate in some peculiar defect in our mode of education, every candid mind must admit the fact, that very few indeed are gifted with that instinctive feeling that intuitively leads them to form a clear and precise estimate with respect to their own capabilities in the art of composition. Our modern method of instruction would appear, in a great measure, to conduce to this effect, imparting as it does a mere routine of information, coercing the youthful mind into a beaten track, engendering a certain amount of self-confidence, with no sufficiently sure foundation to repose upon, and fostering that innate vanity, the besetting sin of mankind, by impressing them with the conviction that to obtain a superiority in their own limited and circumscribed field of knowledge, is to insure a similar position hereafter in that broader arena of literature, where intellects more comprehensive, and of acquirements infinitely more extensive, struggle incessantly for the mastery. Under circumstances of this nature the result can scarcely be doubtful, as, from their very contracted acquaintance with what has been written outside of their own immediate circle of information, they will assuredly be led into one of the two following errors:—into the more common, but certainly more venial one, of giving publicity to a series of truisms, so trite and commonplace as to fatigue and disgust the mind of the reader; or into the more serious and less pardonable one of appropriating to their own use and benefit, in too many instances, the labours of others, under the sincere impression that what they had written was up to that moment perfectly untouched and original. This, on a careful inquiry, will be found to be the true solution, in at least nine cases out of every ten, of those instances of literary larceny that are occasionally exposed to the world, and are unquestionably deserving of the severest reprehension if distinctly proved; but this, we conceive, can rarely be done satisfactorily, as we can scarcely picture to our mind an individual, of the least pretension to character, who could so far demean himself as wilfully to copy or lay claim to the stereotyped ideas of another, more especially where ultimate detection stares him so unequivocally in the face, and the consequences of that detection terminating in such complete exposure and corresponding disgrace. In charges, therefore, of this nature, we should always be extremely slow in pronouncing a sentence of surreptitious dealing, for a man may be completely innocent of such a grave offence, however strongly a suspicious identity of language and a similarity of expression may seem to argue against him; and we can imagine no position so truly deplorable as to be awakened from a pleasing dream of imaginary fame, to be denounced as the unblushing pilferer of the property of another—the sorry plagiarist—the most opprobrious epithet that can possibly be applied to the individual of high and generous feeling, for it not only wounds deeply his self-respect, but likewise taunts him with an excess of grovelling meanness which the world at large, as if by a common consent, has stigmatized, and justly too, with the ineffaceable impress of everlasting ignominy.

We would venture to observe, that one simple axiom should be ever borne in mind by all who are anxious to assume the position of an author, and who are at the same time as equally desirous to maintain that character in a manner calculated to confer credit on themselves. It is, that those who are in the habit of writing much, and wish to do so well, should also read extensively, not only the majority of those works treating of the subject under consideration, but likewise many of those that, perhaps, can claim only a very distant affinity to it. Were this system more generally followed, we would be less frequently annoyed with those repeated complaints of plagiarism, while we might be more often gratified by encountering some old and well-known idea, so completely panoplied in a new and pleasing attire as to render the recognition of what was once a familiar acquaintance a matter of no ordinary difficulty. That suspicious sameness of phraseology would likewise be avoided, as every one of the least sense or prudence would be extremely cautious of treading in the footsteps of him who had so immediately preceded him. The conviction, also, would be gradually forced on the mind, that original thinkers, as a class, are few indeed in number; and not to be met with so commonly, as we would be led to believe from the sentiments entertained respecting them by the mass of mankind.

Should, however, a rational doubt exist respecting the real merits of a work in which we may feel more than an ordinary interest, there can be, perhaps, no more proper course to pursue than that of appealing to the decision of a friend; always provided we have that implicit reliance on his judgment, impartiality, and candour, that we are prepared to abide steadily by it, whatever its tenor may be. Not that this mode of proceeding will be always attended with the anticipated success; for the fact is notorious, that one of the most mighty intellects of modern times, whose magnificent genius has conferred an immortal lustre on the country of his birth, and whose inspired productions must survive as unfading monuments of glory as long as the language in which they have been written continues to be employed as the vehicle of thought,—this man, so sensitive to the imperfections of others, laboured under a force of infatuation so complete, that, uninfluenced by the unbiassed judgment of others, whose opinions he had voluntarily sought, with an obstinacy as perverse as it was unyielding, persisted, to his latest hour, in advocating the superiority of one of his most feeble and worst conceived essays over others whose sublimity of thought, brilliancy of style, and richness of expression, have earned for them a favour as unlimited as it has been richly deserved[a].

As a contrast to this, we have yet another well-authenticated example afforded by a second distinguished author[b], equally as celebrated for the versatility of his talents and vigour of his imagination; who composed and wrote that magnificent work which afterwards proved to be the foundation-stone of his future wide-spread fame; but who, apparently perfectly unconscious of the various beauties which pervaded its every page, threw it carelessly aside, and permitted it to sleep unnoticed for years, until a mere accident chanced to reveal its matchless excellence to a friendly eye, and under his persuasive advice it was presented to a grateful world. These instances might be further corroborated by several others of an analogous nature; the tendency of all being to establish the fact, that there are certain species of literary delusion, which not only repeatedly exercise an inexplicable influence over the judgments of authors themselves, individually, but which will very often treat with scorn and contempt that deliberate and judicious counsel, to which, under different circumstances, the most prompt and willing obedience would have been unhesitatingly conceded.

It is, therefore, after a calm and deliberate review of all the circumstances connected with the point at issue, that we have arrived at the sincere conviction, that M. Petrequin has acted with an unusual degree of cautious discretion, in adopting the course which he has done, before hazarding the high reputation he had previously acquired, by a rash and hasty promulgation to the world of a treatise labouring, confessedly, under this very serious disadvantage, of having been before handled, and that in a most masterly manner, by two or three of the most distinguished men of the day, all remarkable for the extent of their acquirements, and for the eminent character which they consequently attained. It must be invariably attended with decided risk and imminent danger to endeavour to improve on the style and material of another, whose efforts more especially have been crowned with a success universally acknowledged; for however fortunate we may be in shedding fresher light and additional lustre on the subject under consideration, we still must submit to the grave and rather unpleasant charge of imitation,—an imputation not only extremely distasteful to a sensitive mind, but always carrying with it a sufficient weight to create an unfavourable impression at the very onset of our undertaking; thus producing a prestige which it is not generally easy to remove; while, in the event of a failure, no single means has been left by which a sure and honourable retreat might be secured. To avoid a catastrophe so humiliating, M. Petrequin has, accordingly, taken the precaution of submitting, in manuscript, the results of his labours to the critical examination of the Society of Medicine of Lyons, to be guided by their decision as to the propriety of publishing or suppressing the volume before us. By them a Commission, consisting of MM. Gensone, Nichet, and Brachet, was appointed to carry out the proposed object, and it is from their award that we intend to offer some extracts, as they appear to be peculiarly calculated to explain the nature and pretensions of the present treatise. After alluding cursorily to the works of Malgaigne, Velpeau, and Blandin, they thus proceed with their task:—

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[a] Byron.

[b] Scott.

"The classification adopted by M. Petrequin seems to us to be natural, at the same time that it is systematic. His description of all the regions has the advantage of connexion, without effort. He divides the human body into trunk and appendices or limbs.

"The first of these divisions, or the first book, embraces six sections,—the spine, head, neck, breast, abdomen, and pelvis. The second book, or the extremities, is divided into two sections,—the superior and inferior limbs. These eight principal sections are afterwards subdivided into as many others as have appeared necessary for the study of each object without confusion. Thus the head is at first divided into cranium and face. The former is then studied on its external and internal aspects; while the latter comprises successively the auricular, ocular, nasal, and bucco-pharyngeal regions, in such a manner that nothing can elude the knife of the investigator.

"He has not made a complete description of the organs or appearances which are found to be comprehended in each separate region. He proceeds layer by layer, and thus studies objects according as dissection has revealed them to view. In this way it is more easy to make ourselves masters of their relations, each layer forming a species of picture, which more clearly represents the whole, with the relative position of each part.

"Another feature of the system pursued by M. Petrequin is, that of not separating pathology from anatomy. According as he brings into view an object, he is not satisfied in making known its topographical conditions, but he unites with it especially such considerations as have a connexion with their physical and vital lesions, and all the results that may be drawn from them, as far as manual operation is concerned. This mode of proceeding appears to us to combine several advantages; it avoids numerous repetitions, and, above all, makes us fully acquainted with those operative features, because they are found ultimately connected with the organs under discussion, and of which they seem to form an integral portion. There is no time to lose sight of their disposition. Everything is found united in the closest manner; it is no longer parts of a whole, but a whole indivisible.

"In proceeding thus, the author attains with more facility the end he has proposed—of not confining himself exclusively to the considerations relative to surgery, but to embrace at the same time medicine, &c."

Still farther on we find the following:—

"His researches are immense, and he has brought forward numerous and prolific facts having reference to pathogenesis, physiology, forensic medicine, midwifery, pathology, and operative medicine. Nothing is better adapted to display the great utility of regional anatomy, and the exalted rank which it is called on to hold amongst the other branches of medical studies. The surgeon and operator encounter at every step invaluable instructions; the accoucheur will find special researches on the deformities of the pelvis of the mother, and the head of the fœtus, with the operations that these may render necessary; the forensic practitioner will gather satisfactory notions on the subject of wounds, strangulations, asphyxia, perforations of the stomach and intestines, pulmonary researches based on direct experiments. The reader will feel more and more of what necessity is the study of this object, as well to the practitioner, and especially to him isolated in the country, as to the student in medicine.

"We have stated that the work of our colleague was not one of mere compilation, but one of progress. In fact, we have observed a crowd of ideas peculiar to the author, with respect to anatomy, physiology, pathology, and particularly a vast number of operative measures, either new or modified."

The Report concludes with a strong recommendation to the Society by whom they had been appointed, to encourage M. Petrequin in his design of publication; and at the same time congratulates him on the anxiety he has displayed, and the manner in which he has succeeded, in drawing attention to the labours of the physicians of Lyons as often as an opportunity presented itself.

These are high eulogiums, more especially proceeding as they do from a source so exalted and so capable of appreciating the labour that must have been necessarily expended in the production of such a volume, with its intrinsic value as a work calculated to advance the interests of that particular branch of science of which it professes to treat. Its great extent, and the extreme variety of subjects which occupy its pages, must always prevent, from the great space that would be required for that purpose, a complete review of the entire contents, and this view of the case has been already attested by the Commission appointed for its examination; but as any single article may be taken separately and investigated, we shall avail ourselves of this license, and thus endeavour to impart a general idea of the whole, offering occasionally a remark or two, as may be suggested by circumstances. We will, therefore, select as our first example the parotidean region, as presenting, from its complexity and difficulty, a subject well calculated to display the descriptive as well as the general powers of the author.

"The parotidean region occupies a constricted space, long and deep, stretching from the temporo-maxillary articulation to the angle of the lower jaw, limited behind by the auditory canal and sterno-mastoid, and in front by the ramus of the jaw. Its surface is narrowed when the lower jaw is depressed, and it is larger above than below in infancy until the maxillary angle defines it. In some lean individuals it presents an excavation.

"*Anatomical Layers.*—The skin is smooth, finer, and less adherent than in the other regions of the face; it is often the seat of morbid, dark discolorations; the subcutaneous layer is cellulo-adipose. Its inflammation may easily extend itself to the neighbouring parts from the continuity of this layer; it is known under the name of mumps, instances of the metastasis of which to the testicle are cited. Between the two leaves of the superficial fascia are found the cutaneous muscle, branches of the superficial cervical plexus, and certain lymphatic glands very liable to become enlarged in consequence of cutaneous ulcerations of the temple and eyelids; M. Velpeau has proposed their extirpation, and I have myself practised it in some cases; it should be, however, recollected that they repeatedly communicate with the deeper glands, forming a kind of plexus, the removal of which would be almost impossible, owing to their depth. A very tense aponeurosis envelopes the parotid, and its resistance accounts for the acute pains attending on parotiditis.

"The parotid, the largest of all the salivary glands, extends from the zygomatic arch as far as the angle of the jaw. It is lodged in a peculiar excavation, which the cervical aponeurosis, strongly depressed at this point, furnishes, so that the gland is external to the fascia that envelopes the neck; in front it is easy to detach, but behind it is very adherent to the auditory canal and to the sheath of the sterno-mastoid—a fact which entails a dissection both minute and intricate on the operator. When it becomes engorged, it embarrasses the motions of the lower jaw, flattens, and may obliterate the auditory meatus. In case of hypertrophy, it may be developed so as to bury itself behind the ramus of the jaw as far as the carotid artery, to the extent of being felt within the pharynx (Burns). In this condition, should degeneration exist, every attempt at extirpation must be abstained from, as it would be incomplete.

"The parotid is traversed or coasted by the external carotid artery, which divides above into internal maxillary and superficial temporal, by the anterior and posterior auricular, by the external jugular vein which accompanies the carotid, and by a venous branch of communication between the two jugulars; hence the result that inflammations produce a remarkable embarrassment in the circulation of the head. It is in relation with the anterior auricular nerve, which is superficial, with the facial which emerges under its anterior border, and the temporo-auricular, which sends an important anastomosing twig to the seventh pair.

"The parotid is composed of different lobes consisting themselves of lobules or granules agglomerated together, each giving origin to minute excretory ducts, which ultimately terminate in a single one (the canal of Steno), upon which the gland sends a prolongation of its capsule. Haller and Dessault have described a small accessory gland of the parotid, situated in front of the masseter. The canal of Steno leaves the parotid on its anterior and external side, proceeds horizontally from behind forwards, between the masseter and the superficial fascia, parallel to the zygomatic arch and five or six lines below it, pierces the buccinator, and, then curving, proceeds to open into the mouth on a level with the second superior molar tooth.

"Wounds of the parotid are followed by salivary fistula, a methodical compression of which, aided, if necessary, with cauterization, may often succeed; those of the canal of Steno generally require other measures; one of the best consists in the establishment of an artificial opening into the interior of the jaw; I have often succeeded with the assistance of a seton, according to the plan of Deguise.

"What are we to think of the removal of the parotid? Some anatomists have questioned it; M. Malgaigne, who lays much stress on the deep position of the gland, the inevitable lesion of the vessels and nerves which traverse it, and the difficulty of the operation, disputes the reality of this operation; at the same time, Beclard has cited an authentic case; and M. A. Berard, who has collected fifty-two instances, establishes the fact that the parotid has been extirpated in its entirety fourteen times, and partially twenty-three times, &c. This operation would appear less serious than one would suppose; at the same time, degenerations of the parotid itself should be carefully distinguished from those of the lymphatic glands which surround it; some are buried in its parenchyma, and are often the very source of the disease; the gland is in this case only depressed and forced back; this pathological fact, noticed by M. Velpeau, confers a boldness in the extirpation of parotidean cancers. The plan of first ligaturing the primitive carotid has been recommended in this case; but it will be quite sufficient to compress and tie, according as the arteries are opened.

"The parotid has certain special pathological sympathies; in typhoid fever it becomes the seat of abscesses that have been regarded as critical, but do not always present the characters of a crisis. It appears to have functional relations with the pancreas, ptyalism being one of the symptoms of the diseased condition of this gland. In mercurial salivation M. Diday has reaped good results from the application of Goulard's lotion, constantly maintained over the parotidean and submaxillary regions."

We have extracted the entire of this article in order to afford a fair and impartial criterion, by which the spirit of the whole work may be estimated, and most unwillingly we are obliged to confess that at the first glance we experienced no small degree of disappointment at the extreme meagreness of description that unquestionably pervades, at least the anatomical portion of it. This perhaps was principally caused by the highly coloured tone of the Report promulgated by the Commission inaugurated for its examination, which had elevated our expectations above that just level that it is so important should be steadily maintained while engaged in an avocation of this nature; but a further perusal of the work, as we shall have occasion to observe hereafter, clearly convinced us that this was premeditated for the purpose of fulfilling a certain purpose, which we will endeavour to explain at a future period. It is, however, to be regretted that a more comprehensive amount of detail was not given in the particular instance before us, for there is no single portion in the entire human body of greater importance to the surgeon, whether we regard its complexity or the difficulty of properly understanding the precise arrangement of its several component parts. Had its several processes been carefully enumerated, and their relative anatomy distinctly noticed and properly insisted on, the idea of its complete and radical extirpation would only have demanded a passing remark as a measure that had been proposed, attempted, was supposed to have succeeded, but is now discovered by modern anatomists to be beset with such numerous and gigantic dangers as to be, literally speaking, all but impracticable. The sooner, therefore, that speculations of this absurd nature are set at rest for ever, the better will it be for the interests of mankind; for although it may be urged that we have no right to question the direct assertion of the high authority that has been quoted in support of the successful issue of this operation, we will still contend that no absolute and convincing proof of the fact can possibly be adduced; and where so many and such powerful anatomical reasons can be brought forward, all militating more or less strongly against the undertaking, an uncompromising assent to a proposition can scarcely be expected, where arguments, at the utmost only negative, are advanced in its support. It should not be too lightly assumed that an organ, with all its intricate ramifications, has been completely removed, simply because there has been no recurrence of the disease for which the operation had been originally undertaken. The principles of diagnosis of morbid affections, at the period alluded to, were not based on such satisfactory grounds as they are in the present day; and the fact is notorious to every one, that even within the last few years, with all our boasted improvements in this respect, repeated mistakes have occurred, in which tumours unquestionably of a suspicious character have been made the subject of painful and dangerous measures—a critical examination revealing, when too late, that a treatment less heroic would have terminated equally efficaciously.

With respect to the surgical and pathological observations of M. Petrequin on this region, we shall forbear offering an opinion, while at the same time we will admit that it would have afforded us much pleasure to have found the names of Pott, Liston, Dessault, &c., associated with the cure of salivary fistula, without limiting his remarks, as has been done, to the steps adopted by a single individual.

As a specimen of the physiological research displayed by the author, we give the following extract,—not that it can boast any novelty to recommend it, for the fact itself has been well known and established amongst us for a lengthened period; still it will serve to show that the mind of the writer is well adapted for inquiries of this nature, as the experiment has been conducted with much judgment, and its results detailed apparently with the strictest impartiality, evidencing no desire to make out a case favourable to his own preconceived views on the subject:—

" Spontaneous perforations of the stomach constitute a grave question in physiology, as well as in forensic medicine. It has been denied that the dissolving action of the gastric juice can perforate the coats of this viscus. I have cited a clinical case which establishes the reality of this fact (Annals of the Medical Society of Antwerp, 1840). Forgetting that the extinguished vital forces possess no longer the power of antagonizing the chemical, it may have been occasionally attributed to poisoning what was but a cadaveric result, and the natural consequence of the contact of an active menstruum with tissues which, having lost their vitality, relapse under the dominion of physical laws. In 1833 I experimented, in this respect, on a hare, which produced results perfectly convincing: after the fast of a day it was allowed to eat largely; an hour after its repast it was killed, and suspended by the hind feet until the necropsy, which took place twenty-four hours after the death; there was a complete perforation of the great cul de sac, presenting this remarkable fact, that it was exactly in the most depending point, that is to say, where the gastric juice had accumulated a collection by its own immediate gravity. The internal membrane was softened, dissolved, and perforated to a greater extent than the middle; the external or serous presented a perforation about 22 millimeters (10 lines) in diameter, with uneven and broken edges. There was the commencement of effusion into the abdomen. The perforation was evidently spontaneous; it had occurred in twenty-four hours by the sole force of the gastric juice; there was no trace of inflammation either in the stomach or peritoneum,—a circumstance which ought to be taken into consideration in medico-legal investigations; the absence of inflammatory reaction attests a phenomenon purely cadaveric, &c., &c."

It is, however, in his articles on the internal pelvic viscera of both male and female, on the genital and urinary organs, and on the perineum and anal regions, that the genius of M. Petrequin has so conspicuously manifested itself, and it is on all those subjects that he has conferred such an invaluable boon on the profession. The extent of the information conveyed in this portion of the work is positively incalculable, and can only be justly appreciated by a reference to the volume itself; for, anxious as we are to do so, to cull any single part for the purpose of review would be a most ungracious and invidious task, as it would only terminate in destroying the symmetry of the whole, by breaking up that clearness and precision of arrangement which render it so very valuable to the reader. We have, however, no hesitation in stating, that he has exhausted almost everything that could be advanced on any of these subjects; while nothing of the least interest or importance to the practitioner has been omitted or overlooked. In the concluding sections, which embrace the upper and lower extremities, the same systematic order has been observed; while the general anatomy is extremely creditable, and especially adapted to the wants of the practising surgeon, alive to the necessity of refreshing his memory on any particular point before undertaking the risk of any capital operation. Still, it should be carefully remembered that there is little or no effort made to imitate the minuteness of detail, as exemplified in the teaching of the great majority of our modern medical institutions. A broader path appears to have been chosen designedly, and in doing so perhaps the most judicious course has been adopted, for few in the busy career of general practice—and for their guidance and assistance the work would seem to be most directly applicable—can command that amount of leisure requisite for the complete mastery of certain abstruse anatomical points, possessing no interest of sufficient value to compensate them by their acquisition for the time and labour expended in the intricate pursuit. They seek for hints brief, but full of meaning and instruction, and in this particular we believe that M. Petrequin has gratified them to the summit of their wishes.

It is only when we pause for some moments and deliberately reflect on the vast accumulation of facts, the host of authorities quoted, the number of cases cited, the series of anomalies detailed, and the many valuable suggestions, the result of personal experience so candidly imparted, that we are enabled to estimate with any degree of accuracy the incredible toil, unwavering perseverance, and mental anxiety, that the production of such a work must have cost its author. It is, indeed, a gigantic monument of the most untiring industry, unblemished by not even the remotest attempt to make a vain display of superior erudition, but stamped with an unstudied simplicity which pervades the whole, and which would appear to be a natural characteristic of the man himself. In conclusion, might we be allowed to express a wish with any hope of its ulterior accomplishment, it would be that the translation of this book into our own language would be undertaken by some master-hand, who, following the example of South in his edition of Chelius, would still further enrich its already teeming pages with a running commentary, not unworthy of the spirit, information, and research which breathe through almost every sentence of the original.

Lectures on the Principles and Methods of Medical Observation and Research; for the use of advanced Students and junior Practitioners. By THOMAS LAYCOCK, M. D., &c., Professor of the Practice of Medicine and of Clinical Medicine in the University of Edinburgh. Edinburgh: A. and C. Black. 1856. 12mo, pp. 223.

IT was an aphorism of Baglivi which has frequently been repeated, that medicine possesses little pretensions to be regarded in any higher light than a collection of observations. "Ars medica," he remarks, "*tota* in observationibus." It must be acknowledged that, strictly speaking, its claims to rank among the severer sciences have, as yet, been disallowed; it has found no great central point to which its conclusions may tend; no simple, but grand and immutable, laws by which truth can always be determined, and the sources of error gradually eliminated. In the physical sciences such fundamental principles have been discovered: the labours of Newton, rewarded by the discovery of the principle of gravitation, have raised astronomy from being a collection of observations to the position of the noblest of the sciences. In medicine no corresponding guiding law has as yet been found, perhaps never will; and we are driven to the use of the inductive method to determine, instead of positive certainty, the greater degree of probability. When we think we have arrived at some great general principle, after a careful collation of examples, and that we are travelling in the sure and enlightened track of science, some new case or uncongenial fact will upset our combinations, and compel us to retrace our steps for some other way, equally deceptive.

Though in medicine, from our ignorance of a settled standard of comparison, our rules of guidance must thus become more or less conjectural, the search has not been unproductive of useful results. Astronomers well know the value of accurate catalogues of the stars of both hemispheres, as furnishing means of comparing their positions at distant intervals of time, and of thus ascertaining the minute changes which many of them have undergone. In the same way, carefully observed and truthfully recorded cases in medicine and its affiliated arts, though, as it must be admitted, far less reliable, yet may afford data for future discoveries. Some coming great master-mind, like Bacon or Butler, patiently tabulating these records, may catch glimpses of leading truths which may explain and simplify much that is now mysterious and obscure. But the tendency of the present age is to jump too hastily to conclusions; men argue not merely from the particular to the general, but even from the individual to the general. A few experiments on animals make a physiological notion pass current for a time; some vaunted remedy in medicine becomes fashionable, until a new favourite dethrones it from its short-lived celebrity. Few are to be found like the illustrious Laennec, who not only discovered, but himself almost perfected, the art of auscultation. To advance medicine, it is necessary not only to observe accurately, but to be able to use one's reasoning powers rightly upon our observations. Individual examples become of permanent interest then only, when, like soldiers in the field, they can be brought to bear, as one man, upon a given point.

It is important, therefore, that the mind of the student of medicine should be early indoctrinated in the most likely methods of research for the discovery of the great problems of life as yet unknown, and hitherto there has been a deficiency of instruction upon these points. This deficiency has been felt particularly by teachers of medicine, and has led to the publication of the treatise now before us from the learned Professor of Medicine in the University of Edinburgh. He tells us in his preface that he sought in vain for some elementary work on the inductive philosophy which he could recommend to his class for their instruction and guidance in clinical observation and research. He found several sufficiently able manuals of physical diagnosis adapted to students, and good elementary works on the uses of the microscope, and on the routine of the clinical wards, with systematic instructions how and what to observe. But he found none which instruct the medical student, in a simple and easy form, how to use his reason; none which explain to him in especial the nature of the mental processes by which knowledge is acquired in his particular sphere of labour; none which teach him the applications to practical medicine of those aids to the intellectual powers which modern inductive philosophy uses so commonly and so efficiently.

To supply this want he has published the present treatise; and as this is, we believe, his first essay before the public since his appointment to the honourable Chair filled by Cullen and Alison, we accept it in the same spirit with which it is offered.

We regret to admit that the scientific aspects of medicine have hitherto rather repelled than invited attention. This has been partly due to the difficulty of the subject, partly to the uninviting nature of the productions themselves, but perhaps most of all to the want of encouragement for such pursuits among the profession. It is time now to change all this. Since Abercrombie's Treatise on the Intellectual Powers we have a wide interval unfilled. The work of Sir Henry Holland, modestly entitled "Medical Reflections and Observations," has been favourably received by the public as a step in this direction. The learned Germans have also entered the field, and we have a laborious work on Medical Logic from Dr. Oesterlein of Heidelberg, translated for the Sydenham Society by Dr. Whitley, which travels over much of the same ground as the author of the treatise before us.

As Dr. Laycock's work is dedicated to the students of medicine of the Edinburgh school, it is evidently intended to become a class-book for their use, and hence he adopts the division of his subject into lectures as more "simple and familiar than the rigid gravity of a set treatise." He tell us, with some *naïveté*, that they were not *bonâ fide* lectures, but supposed to be delivered to an imaginary audience; "for want of time none of them was delivered *in extenso*, and some were not delivered at all." In the seven Lectures of which the book consists, we have various important subjects presented to us, viz.: the comparative advantages of experience and of theory, both separate and combined; the fallacies to be guarded against in the use of theories, with illustrations of each; the general method and object of clinical study, and the best methods of exploration; descriptions of the several diatheses and cachexiæ; rules for a correct prognosis, and for observing the order of succession of morbid phenomena; particular remarks on critical periods; modes of estimating the results of remedies, with remarks on the sources of error in therapeutics; and in the last two chapters we have described at length the two methods of clinical research,—the *numerical* method, with its advantages and defects, and the *analogical*, to which he gives the preference, and of which he entertains the most exalted ideas:—

> "It is a method, which, when once understood, is singularly easy of application, and equal (the writer is deeply convinced) to the solution of all the problems of life and organization, that it is possible for the intellect of man to conceive, however profound they may be. A method, in short, of unlimited powers, and specially adapted to the needs of medical science."

It will be seen from this summary that subjects of vital importance in medicine form the materials of Dr. Laycock's work; and we must observe that no one can read it attentively without perceiving that the author has reflected carefully upon his subject. We say "attentively," because a hasty perusal would give rather an erroneous opinion of its utility. It is written more for affording heads of subjects for lectures than in detail; more to elicit thought than to supply it. The frame-work is skilfully put together in bones and joints, but it appears to us that it might be made more attractive to youthful minds by smoothing over some of the rigidity of the subject, without sacrificing practical utility. Works for the use of students may be rendered ineffective by the writer presupposing a greater amount of knowledge in the reader than he really possesses, and also by a too profuse employment of foreign and technical expressions, when simpler words in good Saxon English could be employed. No person can peruse the lucid writings of Graves, and Watson, and Latham, without acknowledging that we would lose little by the summary expulsion of many of those barbarous and complex terms which disfigure medical works, and not unfrequently involve both writer and reader in a common maze of incomprehensibility. Scientific nomenclature is said to be valuable, because concise, but clearness is thereby often lost. "Brevis esse laboro," says Horace, "obscurus fio." Teachers of medicine should show the example by repudiating the medical jargon too much employed, and professors in time-honoured universities have, more than others, the means in their power. "Language," says Herder, "is to thought as the skin is to the body." What advantage is there in altering the aspect by pigments, so that the outline, like the skin of a savage, becomes something mysterious indeed, but so unlike nature as to be grotesque?

In pointing out the numerous fallacies in medicine which we often unconsciously commit, the author has done good service, as it is as essential for us to know what to avoid as what to do. Fallacies meet us in various shapes, and we receive from the author illustrations of the more usual kinds. We have, first, the mistake, so often committed, of over-estimating medical *experience*. This is a very widely spread error, and not unfrequently is employed unfairly, a distinction being drawn between a practical physician and a scientific one, to the injury of the latter in public estimation. The author gives its full value to that wise experience which is attained "by the long-continued, sedulous, and accurate observation of manifest external phenomena;" but he takes care to show that this experience is not mere empirical practice, but is really careful observation combined with theory:—

> "Medical practitioners in all ages, noting the great value of simple experience, and seeing how far away from the truth and from common sense men have been led by theories and hypothesis, have put simple experience forward as something better and more instructive than the combination of observation with theory, esteeming them as only mischievous elements, and to be avoided at all cost."

The author then proceeds to attack this opinion by showing that in truth no person can observe facts without intuitively forming in his mind some theory, because the symptoms of every case, when combined, become theoretical opinions; and again, by proving by examples derived from the greatest discoverers in the sciences, that they did not stumble on their discoveries by accident, but by forming successive theories until the true one was established by the remotion of the false. In this way error has prepared the way to a better understanding of the truth.—"Ex errore citius emergit veritas," says Bacon, "quam ex confusione." In every art knowledge can neither be advanced nor supplied without the aid of theories. A man who possesses an ear capable of correctly appreciating musical sounds, and a retentive memory, may imitate successfully a difficult piece of music, but in general persons succeed better by learning musical notation. The most successful cultivators of the art of medicine, as well as other arts, are not the mere handicraftsmen of the profession, but men who unite practical skill with acute and comprehensive observation.

The next fallacy attacked by the writer is one of equal importance, namely, *the abuse* of theories. This error has greatly obstructed the progress of science, by leading it astray to divers paths. It is, indeed, a matter of vital importance to be able to decide upon a theory, whether it be sound or hollow. The test of this, according to the author, is experience. "This is the Ithuriel's spear for all those hypothetical conclusions or theoretical views you may be tempted to adopt." We readily admit the truth of this, but it is not so easy to make the application. How many theories rest on false facts, and thus become more dangerous, as resting on a specious foundation? If experience itself err, how can it detect error? "Quis custodiet custodes ipsos?" As illustrations of the fallacious use of theories, we are supplied with examples of various kinds. Thus we receive theoretical terms for facts, as Locke long ago observed. We employ a collective word, such as "tonic," or "inflammation," in a certain sense, and we are apt henceforward to regard it as a reality, and not as an arbitrary form of expression. In all such cases "the entirety of the group of processes, known under the name of 'inflammation,' has never been observed; we have, in fact, investigated only a portion, and that a very small portion, of the inflammatory process." Not only do we employ terms to denote conditions imperfectly understood, but these terms are often applied *in different* meanings; so that, as Dr. Oesterlein observes, "we conclude that what is applicable in one case would be likewise applicable in another, in which the same term is applied in a sense entirely different."

As practitioners of an art whose chief object is the cure of disease, *certainty* in the application of remedies would be most desirable; still, therapeutical theories abound with fallacies. A very common error is to infer the nature of the disease from the nature of the remedy applied. There is some truth in the doctrine which is deduced from the aphorism of Hippocrates: "Naturam morborum ostendit curatio;" but it is liable to great abuse. One man uses general and local bleeding in fevers, and infers thence that fevers are of an inflammatory nature; another employs ammonia and wine, and declares them to be diseases of debility: each of these opinions is defended as of universal, and not partial truth. One practitioner treats hooping-cough as catarrhal; another as spasmodic; and each exhibits triumphantly the result of his mode of treatment. Again, in estimating the uses and nature of drugs, we are apt to think we have arrived at certain knowledge when we classify them under certain heads. Thus we have, under the class of "tonics," medicines which certainly do not act in a similar manner, or with like effects; and what makes matters still more doubtful, the same drug is described as possessing other and far different properties. Like the learned bachelor in "le malade imaginaire," we often mistake the effect for the cause; and when, like him, asked the reason why opium produces sleep, we reply, "Because there is in it a dormitive virtue, whose nature it is to lull the senses."

"Quia est in eo
Virtus dormitiva,
Cujus est natura
Sensus assoupire."

The author finds this to be the error *par excellence* of the so-called " practical man." "For each symptom this man has a remedy, and talks of tonics, alteratives, astringents, febrifuges, not being in the least aware that every word he uses involves a complex and very doubtful theory." Such persons in their prescriptions aim, according to him, at attacking all the symptoms of a case by a combination of medicines supposed to be adapted to each—while they neglect to view the disease as a whole. The result is a farrago of drugs mingled together in prescriptions, which are given in the hope that some may hit, if others miss the mark; but which, in truth, are strokes struck in the dark, more likely, as all such random efforts are, to prostrate the patient instead of the disease.

The author, in another part of the work, pursues this subject farther, and points out several sources of error in therapeutical observations. Physicians are unfortunately liable to be misled by fortuitous circumstances, over which they have little control; for instance, the adulteration of drugs, the carelessness of the compounder, the neglect of the nurse, the administration of the medicine at an improper time, or its counteraction by articles of diet, or other agents. From these sources of fallacy, easily understood, he passes to others less obvious, and directs attention to the more latent fallacy which arises from the influence of suggestion and expectation. It is by this principle he tries to explain, but rather obscurely, the results of homœopathy:—

> "It is among the established truths of mental physiology that ideas may become realities without the co-operation of the consciousness, and that, whether they originate spontaneously or not, a phy-

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siological or pathological change suggested to the mind of an individual may take place really and actually without the co-operation of any other agent than the suggestion itself."

He disbelieves that any portion of the supposed medicinal agent is taken by the patient, but he thinks that he mentally watches for certain results to happen, confidently suggested to him by the person who administers the drug, as certain to take place. Whether this is due to the influence of the imagination, upon the principle that, "quod volumus, facile credimus," or, more probably, the non-interference with the curative powers of nature, whether either or neither, we leave to our readers to decide.

Another error commonly met with is, "the mistaking the natural tendency to health for the result of medication or treatment." Many diseases have a tendency to terminate spontaneously after a given period, among which may be ranked fevers, the exanthemata, and many others. This spontaneous tendency to health, the result of natural causes more than of remedial agents, is by some overlooked, and assigned, not to the true cause, but to the employment of the particular course of treatment: this is the fallacy of regarding a sequence as a cause, "post hoc" as "propter hoc." This mistake is made by persons whose minds are strongly biassed by preconceived notions in favour of some favourite plan of treatment, and whose judgment is, for a time, placed in abeyance; it is also made from a less excusable motive, from a disingenuous desire to gain a character for skill, even at the expense of truth. Such mistakes, unfortunately, retard the progress of medicine, and, what is worse, injure its efficiency, and lower its dignity as a profession.

We must refer to the work itself for illustrations of the fallacies arising from excessive belief in drugs, or a sceptical pyrrhonism as to their utility. We had intended to draw attention to other topics, and especially to the numerical and analogical method of viewing disease, but we cannot afford space to do so at present. We fear that the topics we have selected are not among the most interesting in the book, and may, perhaps, lead our readers to form an erroneous opinion of its nature. This we should regret, and we therefore hasten to state, that it contains much and valuable information upon subjects important to be known, which cannot easily be met with elsewhere. We would, however, suggest to the author, when another edition is called for, which we trust may not be far distant, to employ fewer subdivisions of his sections, with a greater number of illustrations. The subjects for expansion are in the work itself, and his scientific mind and well-stored memory will easily supply materials.

Outlines of Ophthalmology. Third Edition. *To which is prefixed an Introductory Discourse on the Causes which have rendered the Eye a separate object of Medical Study.* By W. MACKENZIE, M.D., Surgeon Oculist in Scotland in Ordinary to Her Majesty, &c. London: Longmans, 1856. Fcap. 8vo, pp. 72.

Defects of Sight, their Nature, Causes, Prevention, and General Management. By T. WHARTON JONES, F.R.S., F.R.C.S., &c. London: Churchill, 1856. Fcap. 8vo, pp. 149.

THE first of these little works which we wish to bring under the notice of our readers gives a very comprehensive outline of ophthalmology in all its bearings—no point, seemingly, being left unnoticed that has any reference to the eye, its structure, physiology, relative anatomy, or its diseases; it is, in fact, a complete index, if we may so express it, of every matter that is necessary to be studied and understood in the economy of the eye, by every one who desires to become an accomplished ophthalmologist.

"The Introductory Discourse," by which the "Outlines" are prefaced, was delivered in Glasgow University some twenty-eight years since, and was addressed to the students by Dr. Mackenzie at the opening of a course of lectures on the eye; the aim of the learned lecturer being to draw "attention to the causes which have conspired to render the eye and its diseases a separate object of medical study." These causes he enunciates to be chiefly comprised under the four following heads:—

> "1st. The organ of vision is one of the most complicated in the human frame.
>
> "2ndly. Its structure and arrangement of parts are, in many respects, peculiar—its functions altogether so—and, consequently, its diseases different in certain important particulars from those which affect the rest of the body.
>
> "3rdly. The surgical operations occasionally required for the relief of the diseases of the eye are, in minuteness, delicacy, and peculiarity, accommodated, necessarily, to the minuteness, delicacy, and peculiarity of the parts concerned.
>
> "4thly. The diseases of this organ are extremely numerous;

and although in many cases purely local, yet they not unfrequently arise in other cases from constitutional affections, or sympathetically from certain morbid conditions of remote organs."

Under these several heads the distinguished author discusses, pretty fully, the propositions he has set forth; and he winds up by saying:—

> "Such are the four causes which appear to have chiefly contributed to render the eye a separate object of medical study—the eye is complicated, it is peculiar, it is minute; while, besides local diseases, it suffers from numerous remote and constitutional influences."

If Dr. Mackenzie had used the words, a special, instead of a "separate object of study," he would have been more consistent; no one knows better than he does, that it is impossible to study or comprehend the diseases of the eye without directly connecting them, in all their relations, with the principles of general pathology; hence it is quite beside the question to say, or imagine, that because the eye is a separate organ it is to be regarded as independent of the several other parts which constitute the body. We are quite aware that Dr. Mackenzie does not view it in any such a light; but, in the "Discourse" before us, he does not earnestly enough insist upon the necessity that exists for studying the eye and its diseases, as a science special in itself, but still indivisibly united to, and based upon, the general principles which guide us in the study of the physiology and pathology of the entire frame.

We may also say, we trust without offence, that Dr. Mackenzie has not, in this Introductory Discourse, sufficiently impressed upon the profession the necessity there is for every one of its members bestowing a greater amount of time than is usually devoted, to the science of ophthalmology: his position, experience, and reputation, would cause any admonitions that came from him to be regarded with great respect; therefore, we are of opinion, that in presenting a third edition of his Outlines of Ophthalmology to the world, he should have taken the opportunity of pointing out to the profession the many evils and the irreparable injuries that are entailed upon the community, through the course too often followed by students of medicine during their collegiate career, in their utterly ignoring the eye and its diseases as a part of their necessary studies. And, after having ably pointed out the claims that the diseases of the eye present for special study, we consider that he should have called upon colleges, authorities, and licensing bodies to enforce these claims, by making ophthalmology an essential part of medical study—an essential in every complete curriculum.

For our own part, we cannot but express our surprise and regret that this important branch of medical science is so little understood and appreciated; the generality of medical students are satisfied if they know enough of the eye—that knowledge being likely imbibed from a private teacher, to rub through a not very searching examination, and then they think no more about the subject. This should not be: we contend that all licensing bodies, and especially the authorities of the public services, should insist upon all students attending regular courses of lectures on the diseases of the eye, delivered by competent teachers, and also upon the practice of some infirmary, or dispensary specially devoted to the treatment of ophthalmic affections." So long as this is not done, so long shall we find that the practice in eye-disease is mere guess-work, is hazardous and bad, and will continue to be a disgrace to an enlightened profession.

The second work, the title of which stands at the head of this notice, and to which we wish to direct attention, is from the pen of a gentleman well known to the profession and the scientific world as a tolerably successful author. The little book now before us contains several points of interest regarding defects of sight, and has certain directions for their prevention, the result of the writer's experience. We cannot say that this book will likely add much to the author's reputation, for we consider that it is not such a work as might have been expected from his pen. It would, indeed, be difficult to determine whether the text is intended as a popular guide or a professional remembrancer; while, if considered in either aspect, it can scarcely be regarded as "up to the mark." There are several points which we might select as illustrative of this remark, but we need only adduce one in proof of our assertion. In the article on cataract we have been particularly struck with the meagreness of the details; for instance, the author does not say whether the section of the cornea should be upwards or downwards in the operation of extraction, nor does he state in what manner the upper eyelid is to be secured, whether by the fingers of the operator or the assistant. In the needle operations, either for displacement or breaking up of the cataract, no notice whatever is taken of the acknowledged necessity there is for the pupil being kept fully dilated both before and after the operation! These, we submit, are grave omissions from any work that assumes to instruct the profession, while all the other details respecting the nature of cataract and the operations for its cure will hardly be appreciated by the general reader. There is just one exception to this remark, and that is the question if cataract can be cured without an operation? In discussing that point Mr. Jones very properly exposes some of the fallacies which exist, and the tricks which have been played by designing knaves upon the uninformed, and he clearly shows that cataract, when once it has been fully developed, can only be removed by some operative proceeding.

The author has divided his subject into several parts or heads, under each of which he has discussed the various matters which affect the organ of vision injuriously, and the best modes of preventing the evil results likely to ensue; and while we affirm that the book, taken as a whole, has disappointed us, we admit that it contains many useful hints, and may be read with advantage both by the professional and non-professional public.

The Science of Mind; or, Pneumatology. London: Longman and Co. 1856. Vol. I. 8vo, pp. 312.

"The proper study of mankind is man."

THERE is something in a *name;* and something, too, in a *motto.* Be it our present task to examine whether and how far the execution of the portion of the work before us has justified the anonymous author in prefixing thereto either the one or the other.

The introduction to the volume which bears the above *imposing* title proceeds thus:—

> "The materials of the Science of Mind have been in existence from the creation of man. We have in the Pentateuch a rich record of these materials from the earliest ages. Many individuals have successively arisen, who, in their several generations, have been celebrated amongst their contemporaries for their knowledge of human nature, for their sayings and counsels of wisdom, which, in general, have been founded on an extensive observance of man, his capabilities, his susceptibilities, his motives to action. Why, then, is the science of mind to this day so philosophically incomplete? Why is it in so unsatisfactory a state,—so far behind, in its parts and its structure, the other sciences? The answer is, first, because, unlike

other sciences, it is still unorganized,—it is still treated of in a desultory manner: the great want is arrangement of materials and of parts. No man has yet arisen to perform satisfactorily for this interesting, this pre-eminent science—*Metaphysics*—what Euclid did for Geometry, so that additions may be made, but neither the substrata be again disturbed, nor the organization be pulled to pieces, and the parts readjusted. Next, there is yet imperfect discrimination. This important process of intellect has not been carried sufficiently far, as I hope to show hereafter. So long as this continues, confusion and inaccuracy must prevail. Again, terms are not confined to their proper uses, as is done in other sciences, but are employed in an indefinite manner, are used too much for one another, as if that were of no moment, instead of being, as it is, of vast importance to stability and progress.

"Having given my mind for many years to this most valuable science, and having devoted my spare hours principally to it, I feel impelled to offer to those who, by constitution of intellect, are especially interested in the subject, an arrangement of pneumatology, which, so far as it may go, I cannot avoid thinking will be a scientific or philosophical arrangement, in the strictest sense, of those terms. If, on the contrary, I am deceiving myself, and am guilty of great errors, either in respect to the elements of the science, or to the order and connexion of its parts, my labours, like those of many others before me, will have been nought—the desideratum still remain unsatisfied.

"With these slight preliminary remarks, I at once proceed. Dr. Thomas Reid, in his great work, 'On the Powers of the Human Mind,' virtually begins with 'Sensation;' the treatment whereof occupies the second Essay, the first being introductory only. The same is more especially the case in his 'Inquiry into the Human Mind,' Chapters II., III., and IV. Believing this to be the true beginning of the science, and never to be displaced by any other department, I commence with it also, remarking, nevertheless, at the outset, that that most eminent philosopher was in error in classing sensation as a power of the mind: the capacity of experiencing sensation is an attribute of mind, but not properly a power of mind."

Touching the arrangement of the materials in the present work, we find, on turning back to the Table of Contents, that it is divided into two parts, of which the first treats of "The influence and action of matter upon mind, occasioning sensation;" the other is entitled, "The influence of mind upon matter, producing human action."

We shall now proceed to notice more particularly some of the topics discussed in the subdivisions of the first part of this "metaphysical" treatise.

Under the head of "Sensations of Taste" (section i.), the reader is presented with a very long descriptive catalogue of the various kinds of meat which, in virtue of their action on the mind, occasion numerous varieties of this sensation. Let us take the first as an example:—

> " *The Ox or Bullock.*—The flesh of this animal is called beef; it is in large consumption amongst the modern civilized nations of Europe and America. . . . . What the taste of raw beef may be, is utterly unknown to nearly every civilized person. The flavour of beef, when roasted or baked, stewed or boiled, is known to us familiarly as pleasant, but how to describe it *is the difficulty*[!] . . . The flesh of the young of the cow, which is called veal, is *more insipid. The Sheep.*—Mutton, the name of the flesh of the sheep, is of more delicious flavour than the flesh of the bullock. Both roasted and boiled, it is in general consumption by flesh-eaters in the temperate regions. The actual flavour is, however, in the present state of [gastronomic?] science, indescribable. Lamb, the flesh of the young sheep, is like veal, *more tasteless.*"

We must confess we do not admire this mode of commencing a work on metaphysics. To the work itself, therefore (page 6, *et seq.*), we would refer those of our readers who, supposing that they do not already possess cookery-books, may wish for further particulars, assuring them that they will find the other varieties of meat treated of in a manner not less instructive than amusing. Fowls are next considered; then fish; after which comes the consideration of the parts of animals, in detail, as causing the sensation of taste. Of these we shall take but one example, namely—" *Marrow.*—A considerable degree of flavour, and that peculiar, is found in the *nervous* substance of animals, which occupies the middle of the larger bones. 'This, however, seems chiefly attributable,' Dr. Thompson says, 'to a substance which, by boiling and filtration, may be separated.' Pure marrow is insipid and sweetish."

In the same page with this neurose doctrine of medullary matter we meet with the announcement that " the *shell* of eggs contains two substances, the white and the yolk."

In the second part of this section are arranged and particularized a certain number of plants, the parts of which exert an influence on the organs of taste; in the third, such minerals as admit of being appreciated by their sapid qualities; in the next, water, air, and gases; then chemical compounds, &c.

In the concluding part of this first section we have the application of all this preliminary matter to the philosophical investigation of the principles physiologically involved in the sensation of taste. These principles, although stated with tolerable clearness and accuracy in the form of axioms, present nothing very remarkable upon which we need dwell. We cannot avoid taking exception to the following etymological suggestions:—

> "These sensations are called by mental philosophers sensations of taste, but as the word 'taste' has more than one meaning, a more definite term is desirable; they might be called *glossian* sensations, from γλωσσα, the tongue; or *stomatian* sensations, from στομα, the mouth. Altogether, the phraseology of this department of sensation demands much more precision than has hitherto been given to it."

In the next subdivision, which treats of sensations of smell, the same order and arrangement are observed as in the former case. First, animals and animal matters, in which category are included almost all the known animal fetors—yet, strangely enough, he has omitted to notice the fox. The other kingdoms of nature are next ransacked for perfumes; and, finally, we have a few pages devoted to the general principles of the physiology of smell. Here again we meet with a most absurd attempt at improving our nomenclature:—"Sensations of smell," the author proposes, "might be termed *mukterian* sensations, from μυκτηρ, the nostril; and that, or *some like philosophical* term, is necessary for scientific classification."

In the next subdivision are considered the sounds which are severally occasioned by animals or parts of animals, by vegetables, some minerals, &c.; then those sounds produced by the great operations of nature—thunder, volcanic eruption, storm, &c. Next we have musical and other instruments considered as "ratifical" productions, with or by which sounds are produced; also, manufacturing processes accompanied by noise.

So much has been effected by the researches and experiments of philosophers in late times in the domain of Phonics, that we might reasonably have expected to find, in the concluding portion of this section, which is devoted to the consideration of the general principles of sound, something which would really repay the trouble of perusal, but in this we have been disappointed, as the following extract must show:—

> "When sonorous bodies are made to vibrate, the air seems to be affected in a peculiar manner. It is not sufficient that the air be *driven into the ears.* On a windy day the air enters with considerable force; and, in all probability, the momentum is much greater than when thunder is heard; but, in the two cases, there is no comparison in respect to sound. The hypothesis respecting the undulations of the atmosphere in the propagation of sound, I consider to be very unsatisfactory. In a very large missionary assembly, all singing to the full stretch of their voices, I once heard one voice bear

down the whole, and predominate to that degree, that I could not avoid attending to it. Now, what became of the multitude of other atmospheric undulations, and what must have been the capability of one man's wind-apparatus, to overpower the united strength of lungs of two thousand men and women? Because smooth water undulates when a pebble is thrown into it, that is no reason that air should undulate when a sonorous body vibrates: the commonly received hypothesis respecting sound rests, however, upon this analogy. Analogy is the curse of philosophy."(!)

We deny altogether that the analogy of an undulating water-surface has ever formed the basis of the commonly received hypothesis regarding the propagation of sound by waves or undulations. It is true that this familiar phenomenon has been used by writers and lecturers as *an illustration* of the divergence of the sound-waves in all directions from the phonic centre. The alternate condensation and rarefaction of the elastic particles of air, by virtue of which a given sound is propagated through this medium, will admit of illustration in several other ways, without referring to the case of the water-waves complained of above. We would, however, remind the author that the vibratory nature of sound admits of *direct proof.* But he appears to confound the motion of a body of air with the vibration of aërial particles, and assumes that a current of air is directed against and "driven into the ears;" he is, consequently, at a loss to conceive why a blast of wind should not suggest to the sensorium an idea of greater loudness than that perceived when thunder is heard.

In this portion of the work we meet with another instance of etymological coinage, which is not likely to find more favour with philosophers than those to which we have already invited the reader's attention. "This class of sensations," we are told, "might more definitely be designated *ousian* sensations, from ους, the ear; or acoustic sensations, from ακουω, I hear." Of a verity, the sound of the former of these terms must suggest an ousian sensation by no means agreeable to those who have been accustomed to form their derivations, according to the good old custom, from the genitive case.

Sensations arising from colour are treated of in the next subdivision, according to the plan observed with regard to the preceding subjects.

After these come inorganic sensations generally, and those of heat, cold, hunger and thirst, pain, &c.

We shall pass on, however, to the second part of the volume, entitled "The influence of mind upon matter, producing human action."

The author commences by stating that "the human mind influences, in some mysterious manner, a *portion* of that nervous organ placed in the head, which is termed the brain." He then reviews the opinions of Aristotle, Plato, Locke, Reid, Porterfield, Roget, Edwards, &c., and in so doing he pursues a plan which we cannot avoid considering most unsatisfactory to an inquiring reader; for, in perusing a systematic work on metaphysics, as upon any other science, we naturally expect to find the arguments pursued in a continuous, consecutive form; whereas, in the present work, we are hardly able to follow the line of argument, so many are the interruptions, as the following extracts will show:—

> "Mr. Locke has a number of passages in which he discourses of mental influence upon matter, especially in the production of human actions. See 'Essay on Hum. Und.,' vol. ii. p. 122, 'So on the other side,' &c. In this passage, for 'thought,' read 'intellectual influence;' for 'ideas,' read 'thoughts;' for 'thought,' read 'sensation.' P. 198, 'We cannot conceive,' &c. I do not hold with Mr. Locke in his notion, that the conception of mental influence upon matter is more difficult than the conception of the influence of matter upon matter. The difficulty is to conceive how matter can, of itself, or by any inherent power, act either upon other matter or upon mind. The influence of mind upon matter is as evident to us as is the influence of matter upon matter. See farther, p. 105, 'The infinitely wise Author,' &c.; p. 108, 'Observing in ourselves,' &c.; p. 157, 'With such a power,' &c.; p. 223, 'Barely by willing,' &c.; p. 223, 'We find in ourselves,' &c.; p. 224, 'Every one, I think,' &c.; p. 232, 'If I can by,' &c.; p. 301, 'A power of putting,' &c.; 'So the mind,' &c.; p. 302, 'Every one finds,' &c.; p. 307, 'Of our souls the power,' &c.; p. 309, 'A power of action,' &c."

Now, how much more rational it would have been had our author taken the trouble to epitomize the opinions embodied in the very numerous passages thus referred to, and present his readers with a continuous and *readable* account of the doctrines he wished to inculcate.

At page 194 we meet with the following passage respecting muscular action, to the accuracy of which we cannot assent:—

> "The muscles are arranged *in pairs*,—one, being an antagonist to its *fellow-one*, draws the part of the body to which it is attached out of its ordinary or common state,—the other brings it back and keeps it in that state. Dr. Reid says, 'Essays,' p. 61, 'Anatomists inform us,' &c.; p. 130, 'I will to stretch,' &c. Dr. Gregory, 'Econ. of Nature,' has several good passages on this subject: p. 383, 'Muscles never act,' &c.; p. 382, 'The power of contraction,' &c.; p. 385, 'The power which,' &c. See also pp. 104, 156, 157, 158, 224, 225."

Whether the sundry "good passages" thus obscurely alluded to will be found to corroborate the doctrine of the antagonism of muscular pairs, as might be inferred upon reading the passage just quoted, we have not been able to ascertain, owing to the works referred to not being immediately at hand; however, as our mind is already made up upon the subject, it is as well to leave the matter as we have found it.

Before we conclude our notice of this singular book, we must call attention to some further instances of etymological nicety. In page 219, at the opening of the chapter on "the motor nerves, muscles, and actions of the inferior or lower limbs," we read:—"To distinguish the action of the inferior from those of the superior limbs, the former might be called *skelion* actions, from σκελος, leg; or *pedal* actions, from *pes*, a foot." Likewise, in page 224, at the commencement of the next chapter, we read:—"To discriminate human actions performed by means of the arms and hands from the preceding class, they might, in philosophical works, be called *agkalian* actions, from αγκαλη, a bent arm; or *cheirian* actions, from χειρ, a hand. They *are* called manual actions, from *manus*, a hand."

As soon as the concluding volume (or volumes, as the case may be) shall have appeared, we hope to be able to present our readers with a view of the author's general argument.

On the Constitutional Treatment of Female Diseases. By Edward Rigby, M.D., &c. &c. London: Renshaw. 1857. 8vo, pp. 324.

The *topical* treatment of a large class of female diseases has, of late years, engrossed so much consideration, and occupied so many writers, that the title of this book at once arrested our attention, and—we are not ashamed to confess it—prepossessed us in its favour. This favourable anticipation was strengthened by the author's statement in the preface, that he had "as far as possible strictly adhered to the precise meaning of the title-page." From the same source we also learned, that this work is a "strictly practical" one; and to commend it to our consideration it could not come with a higher recommendation. The name of its respected author should almost guarantee its possessing this character; since we owe one of the most important practical distinctions in obstetricy—that, namely, between accidental and unavoidable uterine hemorrhage—to his father, the late Dr. Rigby, of Norwich, to whose memory the present work is, with much good taste, dedicated.

It is divided into chapters, of which there are twenty in number. The first three chapters are devoted to the functional diseases of the uterus, viz., amenorrhœa, dysmenorrhœa, and menorrhagia. The consideration of these subjects occupies more than a quarter of the entire work; but the author prepares us for this, by stating, in the preface, that he has devoted what may appear an unusual amount of consideration to these derangements, not only because they are affections of every-day occurrence, but because he is particularly anxious that their close connexion with the general health, and its various conditions, especially as regards the chylopoietic viscera, should be thoroughly understood; being convinced that on a right appreciation of this depends not only their correct diagnosis, but also the principles of their successful treatment. The author has evidently bestowed much care and attention upon the preparing of these chapters, and brought the results of a large experience and mature reflection to elucidate the subjects of which they treat. This labour has not been bestowed in vain, for they are certainly among the best, if not the very best, chapters in the book, and contain most admirable descriptions of the symptoms and treatment of these diseases—descriptions evidently drawn from nature, and by a masterly hand. Respecting the use of emmenagogues in *retarded menstruation*, Dr. Rigby enjoins much salutary caution, and recommends their employment in a very limited number of cases only. His observations on this point must meet with the approval of observant practical men; and we are glad he has stated his opinion so clearly and so decidedly, as this class of medicines is, we very well know, much too often resorted to by "ladies bountiful," and regular doctors. On reference to the indications which are to guide us in the prevention and treatment of retarded menstruation, he remarks:—"They are not to stimulate the uterus to greater activity by certain medicines, which, however dissimilar in their nature and modes of action, have been brought under one denomination, viz., emmenagogues. Idiopathic amenorrhœa, arising solely from suspended uterine function, without the concomitant circumstances just alluded to, is, to say the least, a very rare affection. The lapse of years has tended not only to confirm this opinion, but also the suspicion that where it has been supposed to exist, the fact has been attributable to the circumstance that the cause had not been rightly ascertained."

Of dysmenorrhœa, he makes two divisions or classes—*func-*

tional and *mechanical*. The former of these may, according to Dr. Rigby, occur under at least five different forms:—1. Dysmenorrhœa, connected with derangement of the digestive organs. 2. Occurring in a gouty or rheumatic habit of body. 3. Dysmenorrhœa of an hysterical or neuralgic character. 4. In connexion with some inflammatory action of the uterus—usually the os and cervix. 5. Arising from ovarian irritation. Under each of these heads the remarks bearing on diagnosis and treatment are most judicious and sound. Very excellent precepts are laid down to aid us in disentangling the complex group of symptoms so often present in these cases, and which tend so much to embarrass the inexperienced practitioner, and to render his remedial measures ineffectual or hurtful. Unless the distinction between symptoms primary and secondary, essential and subordinate, is here kept clearly in view, and each traced up to its own proper source, the treatment must, at best, be empirical and uncertain. The last of the above-mentioned varieties of *functional dysmenorrhœa*—that, namely, which arises from ovarian irritation—is not as generally recognised or understood as it ought to be, considering its importance. We, therefore, transcribe a portion of Dr. Rigby's description of it:—

> "In dysmenorrhœa arising from irritation of the ovary, the pain is not situated deep in the pelvis, as in the other case, but is confined chiefly to the spot about an inch above the middle of Poupart's ligament, frequently extending backwards to the vicinity of the sacro-iliac synchondrosis of the same side, and also down the thigh. It is of a dull and peculiarly sickening character; it is increased by exercise and the passage of constipated fæces, but more especially by the approach of the catamenial period, when the sufferings become very severe. On examining externally, the part is frequently observed to be slightly swollen, and pressure brings on the deep-seated, sickening, and peculiarly intolerable pain which is so characteristic of ovarian inflammation; if applied over the painful spot, it sends the pains backward to the sacro-iliac synchondrosis of the same side, and it is in this direction that she experiences the severe suffering which is produced by the descent of scybalous matter along the sigmoid flexure of the colon. In by far the majority of cases the pain is on the left side; indeed, I may say that it is the exception to the rule when this is not the case."

Internal examination reveals a small and exquisitely tender tumour, high up at the side of the uterus. Pressure made on this spot, either from the vagina or rectum, produces acute pain. In this variety of dysmenorrhœa, we frequently find that fibrinous exudations are expelled; in some cases there will be merely a few ragged shreds of membrane, whereas, in others, large pieces are discharged, sometimes amounting to an entire cast of the uterine cavity.

The *mechanical or obstructive dysmenorrhœa* receives impartial consideration at the hands of the author. He does not by any means discard or underrate the value of the mechanical treatment so much lauded by some contemporary writers, but he makes this, if anything, rather subordinate to "attending to the general health, and rectifying any derangement which may have occurred." In obstinate cases, where milder means fail of enlarging the contracted cervical canal, he says:—"We have no choice but of dividing the contracted portion, by means of the *bistoire cachée*;" but it does not appear whether he himself has had any experience or not in the use of this instrument.

The old arrangement of *menorrhagia* into active and passive forms, Dr. Rigby throws aside, as being quite inadequate to comprehend menorrhagia in all its varieties, or to afford simple and successful rules for treatment. He does not, however, entirely discard this distinction, as will be seen by his classification of the different forms of the complaint. According to the *cause* of the complaint, he makes six divisions of it:—1. Menorrhagia from hyperemia, commonly called active menorrhagia. 2. Menorrhagia from gastro-bilious derangement, including the arthritic or rheumatic gouty diathesis. 3. Menorrhagia from mucous irritation. 4. Menorrhagia from ovarian irritation. 5. Menorrhagia from debility—passive menorrhagia. 6. Menorrhagia from displacement, organic disease, polypus. Each of these forms receives very full consideration. In speaking of the fifth, or passive form of menorrhagia, a variety of hemostatic remedies is enumerated, and the author gives a preference to a combination of an alcoholic extract of matico, with di-acetate of lead, "as probably the most powerful styptic which can be administered internally." He makes no mention of the tincture of Indian hemp, although, in some cases of menorrhagia, it is pre-eminently serviceable.

Although the author disputes the correctness of treating leucorrhœa as a separate and distinct affection (as most of the older, and some of the modern writers on female complaints have done), he, nevertheless, devotes a chapter to the consideration of "uterine and vaginal discharges," in order to point out their respective semeiological value. He does not attach very much *practical* importance to the microscopic characters of these discharges, and describes them as they appear to the unassisted eye; and, therefore, with the characters which they ordinarily present, and by which they are most familiar to the practitioner. He considers this subject under two heads, according as the discharge is connected with *functional derangement*, or *organic disease*. Such a division has little utility, inasmuch as we find the same species of discharge is often attendant both upon functional and organic disease.

Chapters V. and VI., upon inflammation and ulceration of the os and cervix uteri, though very short, are yet highly practical and instructive. His views upon these subjects are entirely consonant with those which we have maintained and advocated in this Journal for years past—in fact, since the commencement of the controversy about the use of the speculum. Though in the minority, we nevertheless felt convinced that eventually the doctrines to which we subscribed would prevail, and that the pathology which attached such paramount importance to inflammation and ulceration of the os uteri would not stand the test of experience. Unless we are greatly mistaken, it will be found that the general opinion of the profession on these points is undergoing a great change. We are glad to see that so able, so experienced, and so accomplished an accoucheur as Dr. Rigby has expressed his opinion upon them in clear and decided language, and we doubt not that it will powerfully help forward the desired reformation. The following extract will suffice to show the author's views on the general pathology of inflammation of the os and cervix uteri:—

> "I must beg it to be remembered, that I do not feel justified in looking upon it commonly as a primary idiopathic disease, but rather as one which is of a secondary character; or, in other words, symptomatic of some cause, the presence of which has induced it. I can no more look upon inflammation of the os and cervix uteri as a primary disease, causing derangement of the general health, &c., than I could on a gouty toe, a rheumatic knee-joint, or enlarged strumous gland. Most of these uterine affections are the local manifestations of some general derangements, but which, in their turn, react as causes, producing their own set of sympathies and effects."

As a matter of course, these pathological views must exercise a most material influence upon the management and treatment of the large class of cases to which they apply. In his enumeration of the causes of inflammation of the cervix uteri, he mentions one cause—

> "Which has existed during the last few years to a considerable extent, viz., the dishonest application of caustic to the os uteri at intervals so short as to render it impossible for the effects of the first application to have healed before the second was made, and con-

tinued at this rate for such a length of time, as to set up some irritation, and even produce very serious injury."

It has been the fate of every valuable agent or appliance within the range of our art to have been, at one time or other after its introduction, subjected to abuse,—to have been employed in cases to which it was not legitimately adapted; but we seriously doubt whether any agent has ever been so frightfully abused, with consequences so deplorable, as the uterine speculum. It is plain a reaction against the instrument has set in (we feel not a little proud to think we were among the first to bring this about); but it is not without apprehension we look to the result when the sense of the profession and of the public is thoroughly awakened to the evils which the abuse of the speculum have entailed; for we fear lest a valuable aid to diagnosis may be condemned, and its use altogether inhibited. That this is no idle supposition, no groundless apprehension, will appear evident to any one who just considers for one moment the *double train* of evils, viz., the physical, and, worse still, the moral evils which this abuse has led to. The language of Dr. Rigby upon the subject now before us is indeed strong and pointed, but not more so, we believe, than is justified by the facts:—

"Ulceration of the os and cervix uteri (when unconnected with malignant disease) is a very simple affection of the mucous membrane covering those parts, and, like ulceration of the throat and tonsils, must rather be looked upon as a local result of constitutional derangement, and treated accordingly. Its presence can, doubtless, produce much irritation and corresponding local symptoms, as has also been shown to be the case with the affections I have described in the previous chapter; but to assert that it is a cause of general derangement in the system, and to propound the postulate (for I can call it nothing else) that it is a most frequent primary cause of impaired health in women, argues either a singular ignorance of the fundamental laws of pathology, or great indifference to truth, in the attempt to propagate and maintain certain doctrines in justification of an improper and dishonest mode of treatment.

"The subject of ulceration of the os and cervix uteri has been of late years exaggerated to a remarkable extent, both as regards its supposed frequency and its effects, and presents an instance of delusion as discreditable to the candour of a practitioner as to the common sense of his patients. It has been asserted that about nine out of ten patients owe their various symptoms to this cause; and to support such an assertion, every variety of appearance which the os uteri presents, as seen through a speculum, has been pronounced to be ulceration, although, in reality, having nothing whatever to do with it; and numerous cases have come under my own personal knowledge where caustic has been even applied to a perfectly healthy os uteri, and the patient informed that she had 'ulceration!'"

The application of strong caustics to the os uteri, in cases of ulceration, is a practice but seldom resorted to by Dr. Rigby, although constituting the sheet-anchor of many modern obstetricians. Solid lunar caustic, and potassa fusa, or potassa cum calce, are the only caustics of which he makes mention.

The chapters on displacement of the uterus will be read with pleasure and satisfaction. That on *prolapsus* uteri is, as the author informs us, in great measure a translation from Richter's Principles of Surgery. The author is averse to the use of pessaries for the relief of this complaint, having rarely, if ever, used them in the numerous cases of prolapsus which have come before him in hospital practice. On this point we must differ from him. While fully admitting that they are at best but palliatives, still the amount of relief which often attends the use of a well-adjusted and proper-sized pessary is very great,—in fact, for the time being, the patient feels cured of her distressing symptoms. Among the upper classes their use may frequently be rendered unnecessary by rest and the diligent use of vaginal injections, &c.; but among the working classes, where such cannot be had, the employment of pessaries often enables us to confer on the patient very great benefit, and to fit her for the active and necessary duties of life.

Retroversion of the uterus is not necessarily indicated by any symptoms, but generally, according to Dr. Rigby, it is attended by some that cannot escape notice. When it exists for any length of time, more or less irritation, congestion, and even inflammation of one ovary, usually the left, is produced; and for this he gives the explanation, that the broad ligament on that side is put on the stretch, and the returning circulation of the ovary is thereby obstructed. This way of accounting for the ovarian irritation observed in some of these cases appears to us very fanciful. In the reposition of the organ he employs the uterine sound, and for its maintenance in the natural position he attaches much value to the observance of a *prone* posture of the body, together with aperients, &c. When these means entirely fail, he recommends the supporter devised by Dr. Simpson. At the same time he freely admits, that "if the system of the patient be irritable, these instruments are apt to produce a good deal of ovarian as well as uterine suffering, especially at the catamenial periods, so much so as even sometimes to preclude their use."

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For the removal of large *polypi* Dr. Rigby gives a preference to the ligature, "as the only safe means." On this practical point he is at issue with Dr. Simpson—(an authority he generally treats with great and deserved respect)—who is a strong advocate for excision. The danger apprehended by Dr. Rigby in the use of the scissors is, that "occasionally it will be attended with considerable hemorrhage." Whether this opinion is based upon personal experience, or not, is not stated, which is much to be regretted, as this question, like every other of a practical nature, is to be decided by *facts* only. Dr. Simpson thinks that the danger of hemorrhage, after excision of the polypus, is very remote, and can without difficulty be controlled. The dangers connected with the use of the ligature are passed over unnoticed by Dr. Rigby, and yet these dangers are considered by Dr. Simpson and others to be of a graver kind than any attendant upon the operation of excision. In the 42nd Number of this Journal (May, 1856) is a paper on this subject by Dr. M'Clintock, which was read before the Dublin Obstetrical Society. In it are recorded three cases of death supervening on deligation of uterine polypi, and many other cases of a similar kind, in the practice of Dupuytren, Blandin, Abernethy, Babington, Hunter, Denman, Gooch, Hamilton, Simpson, Boivin and Duges, &c., &c., are referred to. As the result of his researches on the point, this writer tells us:—1. That death may take place before the ligature has cut through the neck of the polypus, even in cases where this has not been unusually delayed, and where no part of the uterus has been included in the ligature. 2. That in some cases death has taken place from the supervention of peritonitis. 3. That in other cases the ligature has given rise to genuine uterine phlebitis, which has proved fatal. 4. That in many instances a fatal termination has been brought about by a kind of low irritative fever, or state of constitutional irritation, which the presence of the ligature has set up. 5. That pelvic cellulitis is a result to be apprehended from the operation of ligaturing uterine polypi. We may, then, look upon it as well established, that the dangers incident to the employment of the ligature are neither imaginary nor trivial; and hence we cannot but regard the complete silence of the author upon this part of the subject as a serious omission.

Polypoid masses of malignant growth are generally considered as unfitted for the ligature; but Dr. Rigby assures us that he has treated many cases of malignant disease in this manner with good effect. He denies that this relief being of a temporary character is a contra-indication to the use of the ligature. In many inveterate cases of fungoid uterine disease, he has had reason to be thankful that such a means was in his power for lessening the constant discharge, the frequent hemorrhages, and severe sufferings of the patient.

Fibrous tumours of the uterus occur, according to Dr. Rigby, under two very different forms—the *continuous* and the *isolated.* The former of these is a mere local hypertrophy of the uterine wall, generally the posterior, and hence we find the fibrous structure of the growth to be continuous with that of the organ in which it is situated. This is the rarer form of the disease. The other form presents many varieties, from small granules, embedded in the proper texture of the uterus, to single or conglomerated masses of vast size and weight. "These isolated fibrous tumours are usually much harder than those of the other species, which preserve more or less elasticity to the feel, even when they have attained a considerable size; whereas, the others, from an early period of their growth, present a cartilaginous degree of hardness, which is occasionally increased still further by the deposition of calcareous matter." The distinction here laid down between these two forms of the disease is a good one pathologically; and still more valuable is it in deciding the question, whether a fibrous tumour be capable or not of artificial removal—as any operation for this object must, the author thinks, "refer chiefly, if not solely, to the isolated form of tumour."

The medical treatment of these formations is very fully discussed, and the possibility of their spontaneous removal, or their dispersion by local and general medication, is satisfactorily established, we think. This has long been a vexed question; and although Sir Charles M. Clarke pointed out the fact that these tumours do sometimes undergo a diminution in size or altogether disappear, still we know there are many men of eminence who discredit this statement, and hold that fibrous tumours never disappear. The local application of leeches and of strong mercurial ointment, together with the internal administration of solution of chloride of calcium, or of the natural or artificial Kreuznach water, were the principal means under the use of which a partial or complete cure was effected. The remarks of Dr. Rigby upon this part of our subject we strongly recommend to the careful attention of practitioners. Altogether, this chapter on "Fibrous tumour of the uterus" is one of great interest and practical value.

Rokitansky, and some other modern morbid anatomists of eminence, consider scirrhus, or hard cancer, as a disease of extreme rarity, or even doubtful occurrence, in the uterus.

This opinion does not receive the full assent of Dr. Rigby: and we most fully admit the validity of his objections to it. He expresses his dissent, however, in a very cautious and guarded manner, out of respect for the authority of the pathologists with whom he differs. But in truth, upon this point we cannot but regard the opinion of Dr. Rigby as being entitled to fully as much respect as that of any other pathologist. His words are:—"I must not let this opportunity pass by, of recording my conviction, that destructive cancerous disease of the uterus does not always exhibit, either in the first or second stage, the characters which are assigned to cephaloma only; and if these characters be not those of scirrhus, they, at any rate, resemble them more than those of cephaloma."

It is only since microscopy came into vogue, as an auxiliary to the study of morbid anatomy, that the opinion here controverted has originated; for, as long as pathologists used their unassisted vision, no doubt whatsoever was entertained of the predominant frequency of hard cancer. This, however, is dangerous ground to venture on at the present day, when every question, even life or death itself, is decided by an appeal to the microscope. This much we will make bold to say: that it appears to us very questionable whether sound pathological knowledge will be advanced by the use of high magnifying powers. When the magnifying power is over 200 or 300 diameters, we believe that the sources of obscurity and error are just as numerous, though of a different kind, as when the naked eye is employed. To avoid these errors it requires a degree of expertness and proficiency in the use of the instrument, to which few persons can ever attain. Along with the greatest delicacy in the adjustments and movements of the instrument, there must be associated a certain degree of education of the optical sense, to insure a truthful result. In the very same specimen, one examiner will probably see, or fancy he sees, oval cells; another, caudate cells; another, nucleated cells; another, nucleolated cells, &c. &c., according to his degree of proficiency, and the circumstances under which the examination is made.

The observations upon the treatment of cancer uteri are most excellent. The author is in favour of excision of the os uteri when the disease is clearly limited to this part; and states that this operation may be performed with safety, and with the best results. Unfortunately, we seldom see the disease in this very early stage, and its positive identity at this period is not an easy matter. He is averse, generally speaking, to the use of caustics of any kind; but we must let him speak for himself on this point:—

> "In those cases where the suspicious part consists merely of a little isolated tubercle, not bigger than a small pea, and which is probably an indurated muciparous gland, but which is becoming tender and irritable, and the patient complains of lancinating pains, which she distinctly refers to this point, we can successfully obliterate it by holding a piece of lunar caustic against it for about a minute; the darting pains cease henceforth, and, on examination two or three weeks afterwards, the tubercle will have nearly, if not entirely, disappeared. With this exception, I have no hesitation in declaring that the application of caustic in either stage of the disease is mischievous; if applied during the first, or stage of induration, ulceration is liable to be brought on, where, but for this cause, the disease might have continued in abeyance even for years. In the second stage, viz., of ulceration, I have repeatedly seen the process greatly accelerated by caustic; the sore quickly assumes a corroding character, and spreads with a destructive rapidity, which soon exhausts the patient."

The internal use of iron is very strongly recommended, and in connexion with it the author adverts, in honourable terms, to the writings of the late Mr. Carmichael on cancer. The only other remedy which he thinks can approach to iron, in these cases, is arsenic. In every case where the disease assumes a polypoid form, he advocates the application of the ligature. The general tenor of his remarks on the subject of treatment are rather encouraging, and tend to show that even this dread malady may sometimes yield to the well-directed and persevering employment of remedies. He alludes to cases occurring in his own practice, " where every symptom of cancer of the os and cervix existed, both as regards the general condition of the system, as well as local changes, and where, after a vigorous but protracted struggle between the treatment and the disease, the latter yielded; the lancinating pains have ceased, and the swollen, indurated cervix has returned to a healthy condition."

Of the succeeding chapters in this book, those, namely, on corroding ulcer, pruritus pudendi, urethral and ovarian affections, we can only take a general notice. They are fully equal in merit to the other portions of the work, and will be read with interest and profit by the practitioner.

Altogether we have been much pleased and edified by the perusal of this work. It fully sustains, we think, the reputation of its author, and shows him to be a man possessed of considerable originality of mind, and whose views in obstetric matters are broad and unprejudiced. It does not at all affect to be a systematic treatise, but merely a record of the opinions and practice of the author upon the various diseases of which it treats. It contains little allusion to the writings or opinions of authors, and scarcely enters into any microscopic or histological details. This feature will rather enhance its value to a large class of readers,—men engaged in active practice, who have not time for making minute researches, but who, nevertheless, want to know how diseases are to be recognised and treated. To meet with a work of this unpretending, but yet withal valuable kind, is very refreshing at a time when most medical writers vie with each other in evincing depth of research, and a minute acquaintance with their subject; overloading their pages with the conflicting opinions of "authorities," and with the results of delicate microscopic or pathological investigations, which few can ever hope to be able to realize or refute.

The title of this work, though not strictly correct, points out, nevertheless, its leading and prominent feature. We know of no other obstetric writer who so strongly insists on the intimate connexion between uterine and constitutional disorders, or who has carried out this principle so consistently and so successfully. On this account we look upon the work as particularly valuable, and calculated to do an immensity of good at the present time, by dispelling the one-sided and narrow views so generally prevalent respecting this class of diseases, and placing their pathology and treatment on a sounder and more rational basis.

It affords us no small satisfaction to find, that many of the views here put forward, with such clearness and force of argument, and grounded upon ample experience, in a general way coincide with those which we have for years back advocated in this Journal. To all his views and practical precepts we cannot yield our assent. He talks a great deal of "the rheumatic gouty habit," without exactly defining what his idea of this is; and is, perhaps, rather fond of blue pill and active purgatives; indeed, on the whole, his practice is rather characterized by the *nimia diligentia.* Dr. Rigby seems to have a large confidence in the resources of medicine, and to this we would attribute his, *perhaps,* excessive fondness for the administration of drugs. Should a second edition of this work be called for, its value would be greatly increased by the addition of a good index.

Du Siége commun de l'Intelligence, de la Volonté et de la Sensibilité chez l'Homme. Par MAX PARCHAPPE, Inspecteur General de 1re Classe des Établissments d'Aliénés, &c. Première Partie: Preuve Pathologique. Paris: Victor Masson. 1856. 8vo, pp. 180.

IN the present day, when medical literature is absolutely teeming with such an exuberant display of erudition on almost all the varied subjects with which it can possibly claim the remotest affinity, it has repeatedly struck us with at least some surprise, why one branch of it, unquestionably deserving, from its undoubted importance to mankind in general, of more than ordinary consideration, has been in a great measure neglected, or, to express ourselves more properly, usually treated in a secondary manner, especially by those whose admitted ability and great powers of discernment, combined with the opportunities afforded by the positions which they very deservedly occupy, might have naturally led us to entertain the flattering hope, that we would yet be put in possession of some most valuable work on nervous lesions—the deliberate result of lengthened experience and observation skilfully directed, laboriously tested, and circumstantially corroborated. A little inquiry will, however, show us, that few indeed are the monographs exclusively devoted to the consideration of those most momentous diseases; and, while on the one hand the practical anatomist, as far as actual demonstration of the condition of normal structures possibly can extend, and the physiologist, as far as inductive reasoning and experimental research drawn from comparative anatomy can be made available, appear to have executed their individual portion of the required task with a patience and perseverance deserving of our most unqualified approbation,—it must be confessed, on the other, that the actual practitioners, whose peculiar province it must always especially be to deal practically with those lesions in question, have hitherto seemed to exhibit a certain slowness and apathetic indifference, manifested by an almost total neglect in attempting to verify by the means so amply placed beneath their control the facts and hypotheses that have been from time to time advanced by their fellow-labourers. Indeed, in the great majority of instances they would appear to be perfectly content in following, perhaps sometimes too servilely, in the footsteps of their predecessors, adopting with undeviating precision their particular line of practice, because it chanced to have been successful in a certain series of cases, while at the same time they seem to have overlooked one important fact—that a difference in the character of a lesion, however trivial, if not properly understood, may render all those common-place efforts completely ineffectual.

Taking as an example the chest—another closed cavity—before the stethoscope with its invaluable diagnostic properties was even thought of, the well-informed physician had acquired the power of distinguishing with an almost marvellous exactitude the nature of the disease that was lurking within its sealed walls; and this faculty of discrimination was founded on principles based on external and unequivocal symptoms, verified by repeated post-mortem examinations, which had at length succeeded in reducing the intricate class of affections incident to this particular region to a regular category, on which future practitioners might rely with the fullest confidence. In prophetic language the master of his art could foretell with unfailing precision to his admiring disciples that crowded around him, the character of the disorganization which would be revealed on a cadaveric investigation; and where a fatal termination permitted such a result, he was rarely found to be wrong in the conclusions at which he had arrived; for this power of prescience depended not upon theories, too often the offspring of a vivid and excitable imagination, but upon facts, the absolute and incontestible deductions of actual observation obtained from the combined gleanings of the many who had preceded him, as manifested by external signs, which time had proved to be the surest evidence of that disease which was so insidiously conducting its destructive ravages on the more vital organs of its unfortunate victim. Those exceptional cases which will sometimes occur were carefully investigated, and their symptoms accurately noted and preserved, while the minutest circumstance which might have caused the error in diagnosis was studiously recorded, in order to obviate that tendency to mistake, which had been discovered to prevail in the instance under consideration—a mode of proceeding attended with advantages so incontrovertible as to require no arguments in their favour to establish their utility. And here very properly arises the question—why a system which had been found to eventuate so beneficially in the one instance, could not be expanded and made to apply equally well in those affections engaging the nervous structures generally?—or is there anything so peculiar in the natural organization of those parts as to present an insuperable obstacle to the employment of the same means for the purpose of acquiring an equivalent amount of information? To this we conceive it may be safely answered, that it is at all times and under all circumstances perfectly possible to obtain from actual autopsy a thorough insight into the nature of all diseases affecting the encephalic centres and their appendages, and thus gradually so to increase our knowledge of their various characters and peculiarities, as in a great measure to render them as amenable to judicious treatment as in those which engage, in such vast numbers, the thoracic and abdominal cavities,—the principal drawback to such a desirable consummation essentially appearing to be, the immense amount of labour and application that must be necessarily expended in order to accomplish effectually an undertaking of such admitted intricacy. The careless, rapid, and inconsiderate dissection which has been found to answer extremely well for the investigation of the nature of those broadly marked lesions affecting the lungs, heart, liver, or any other of the larger and firmer viscera, will be found completely inadequate for such a purpose, when attempted to be similarly applied to those more delicate structures which nature, alive to their extreme sensibility and obvious susceptibility to injury, has displayed the most jealous attention to protect from even the shadow of danger,—thus tacitly impressing us with the idea of the caution and deliberation that are so absolutely requisite to prevent a single inconsiderate stroke of the knife from, perhaps, utterly defacing, or at least partially altering, the vestiges of a disorganization from which a mine of valuable information might have been extracted, had greater attention and less haste been displayed in the steps of the operation. To be convinced of the truth of what has been just stated, we have only to observe the practical anatomist simply preparing for his demonstration in the theatre—the spinal cord for example—and then we will be satisfied of the amount of tedious toil which he is constrained to undergo, in order to render the subject on which he is engaged at all intelligible to his auditory. No matter how practised his hand may have become from the number of years spent at the same employment, his mode of proceeding is still marked by the same calm and deliberate precision; and while, in obedience to his exquisite manipulation, one point after another is successively disclosed to our eager gaze, the contrast which we are involuntarily compelled to draw between his elaborate and finished production, and the ruder and coarser attempts of some less experienced tyro, to whom has been confided a similar task, requiring such delicacy of touch, is always sufficient to excite a feeling of ridicule, if not of absolute disgust. In cases of this nature it has been pleaded in extenuation, by the physicians and surgeons attached to our larger hospitals, and, no doubt, with great justice, that they really cannot afford the time that is so absolutely necessary for the purpose of conducting personally inquiries of this description, and that they are, therefore, compelled to commit to less skilful hands what they would themselves be most anxious to perform, were they not prevented by the circumstance already alluded to. But whilst freely admitting the validity of this excuse, we must be equally candid in stating, that it has hitherto formed one of the most powerful arguments against the system, as pursued at present in the great majority of our public institutions, as well as of those of the adjacent kingdoms.

But, above all, it ought ever to be remembered that, in every case in which it is deemed necessary that any of the nervous structures should be submitted to a cadaveric investigation, the earliest possible moment should be selected, in order to invest the inferences which may be drawn from it with any degree of physiological value; for the fact is well known, even to the youngest tyro in the profession, that a very short space of time, indeed, will be always sufficient to create a striking amount of alteration in those parts when even in a healthy state; and it may be, therefore, easily imagined how intensified this alteration must become in tissues rendered still more softened and frail by disease, especially where mere position must always have the effect, at one time, of inducing an excess of fluid depending on gravitation; and, at another, the reverse, from the opposite cause. The results of such an occurrence can, therefore, be only rationally guarded against by instituting our investigation as soon as possible after death, as, by this means, we will be better enabled to anticipate many of the difficulties which so frequently beset and complicate the operation when deferred, as we have known it to be, sometimes for days together. Such a mode of proceeding cannot be too strongly condemned, and, strictly speaking, can only be regarded as a very apposite corollary to some of those absurd exhibitions which, we grieve to say, are too commonly resorted to, especially in England, where bodies that have lain in the damp earth, perhaps for weeks or months, have been solemnly exhumed, gravely submitted to examination, and, from the liquified and putrescent mass—the identity of which could only be established from the fact of the locality from which it had been removed—an opinion has been as gravely enunciated respecting the condition of even the most delicate structures at the period of death,—a grossness of absurdity scarcely to be credited in the present advanced state of modern science, and only adapted to the crude and imperfect ideas of the darker ages, in which the imagination of his auditors formed the most unbounded field for the necromantic knowledge of the pseudo-philosopher to exercise his ingenuity upon.

The work of M. Parchappe at present lying before us appears to afford a valuable lesson as to the mode which should be pursued in endeavouring to arrive at definite conclusions from the facts furnished by pathological evidences. Starting with the principle, " that the cortical layer of the brain is, in man, the common seat of intelligence, volition, and sensibility," he seeks to substantiate his views by proofs adduced from actual observation after death, having, however, previously, and with great care, detailed the several symptoms that preceded this fatal result. The indisputable advantages necessarily accruing from this method of proceeding must be obviously apparent to every reasoning mind; and although physiological researches, aided by experience, may have, in many instances, succeeded in arriving at inferences in a great measure in close conformity with the results revealed by the cadaveric examination, still it must always be considered as an object of no common interest and gratification, that actual inspection should have so clearly demonstrated the truth of those premises which essentially owed their origin to, and principally rested on, inductions drawn from empirical reasoning and experiment, industriously pursued in the fertile fields of comparative anatomy. We shall, however, proceed at once to the more complete analysis of the system, as pursued by this author, and by this means our readers will be enabled to appreciate more fully the excellence of its arrangement, as well as the amount of reliance that may be placed on the theories which he has advanced, as supported by the merit of the cases which he has abundantly cited.

At page 29 he lays down the following proposition:—

" Pathological alterations of structure, involving the anterior roots of the spinal nerves and the anterior columns of the spinal marrow, entail exclusively paralysis of voluntary motion."

In attestation of the truth of the doctrine here enunciated, we have no fewer than seven cases narrated; their symptoms during life carefully stated, and the results of the post-mortem examination minutely described. From this extensive series we have selected No. III., which will afford a tolerably fair criterion of the mode in which these operations are conducted by our French contemporaries.

" M. Cruveilhier has communicated to the Academy of Medicine, on the 29th of March, 1853, the case of a man, aged

32, who had entered the hospital in 1850, labouring under paralysis, accompanied with atrophy of the muscles, already in a great measure general, having commenced about two years previously, and terminating in death on the 12th of February, 1853.

"Intelligence and sensibility had continued in a state of the most perfect integrity for the entire duration of the disease, up to the moment of death.

"All the muscles of the limbs and trunk presented, on the autopsy, various degrees of lesion, characteristic of muscular atrophy."

The following are the lesions that were ascertained to exist in the nervous system:—

"The encephalic mass is in its most normal condition, and even remarkable for its consistence. The spinal marrow is perfectly healthy in size, colour, and consistence. The anterior columns are in a normal state. The posterior roots of the spinal nerves are, likewise, in a condition of the most complete integrity; but the anterior present a very remarkable inferiority in comparison with the posterior, and this inferiority is strikingly marked especially in the cervical region. Whilst the relation, according to Cruveilhier, between the anterior and posterior roots is, in the cervical region as 3 to 1, in the dorsal as 1½ to 1, and in the lumbar as 2 to 1, in the case under consideration the anterior roots were not a fourth or fifth in size to the posterior in the dorsal and lumbar regions, and not one-tenth part in the cervical. In many places of this last portion the roots were reduced to their mere neurilemma, and exhibited the appearance of extremely fine gray filaments, composed solely of the investing sheath. Those filaments, when examined with the magnifying glass, displayed not a trace of nervous tissues, strictly speaking."

Here, indeed, we are fully aware that it may be argued that this, and the six other accompanying cases devoted to the confirmation of the same object, have nothing whatever to recommend them to the favourable notice of the well-informed practitioner, as this peculiar affection—an atrophied condition of the muscular system, depending, of course, on want of due and proper exercise, from the loss or diminution of nervous supply—has been well understood since the days of Sir Charles Bell. But, while admitting the correctness of the assertion generally, all we desire to contend for is, that this investigation of M. Cruveilhier is admirably calculated to establish, more effectually, a foregone conclusion; perhaps not before sufficiently confirmed, for, as M. Parchappe very justly remarks in another part of his work, that inferences derived from experiments on the lower classes of animals, however conclusive they may appear to be, and, if repeated, however consonant they may prove in their results, still those results, when attempted to be applied to man, must be received with certain modifications; as the peculiar organization of the latter, combined with his more exalted tone of sensibility, must always have a tendency to impart a more striking manifestation of external evidences, perplexing, not only from their greater number, but likewise from the increased amount of intensity with which they always display themselves.

At page 57 we find the following remark:—

"Particular observations adapted to demonstrate positively the character of the central action which belongs to the gray substance of the spinal marrow, the medulla oblongata, pons varolii, the optic thalami, the striated bodies, and cortical cerebellar layer, are not, as yet, very numerous in science.

"It seldom happens that pathological alterations are found absolutely circumscribed to any one of those parts of the gray substance; and it is still more rare, where the fact does occur, that observation during life has been conducted with all that desirable strictness with regard to symptoms, as might have afforded certain unexceptionable results."

We are exceedingly sorry that we cannot altogether coincide in the doctrine as here laid down by our author, for we must still adhere pertinaciously to the opinion we have invariably entertained, that opportunities are rarely wanting; but, generally speaking, such is the perverse and absurd spirit of the arrangements that pervade the economy of many of our time-honoured institutions, as they are ludicrously called, the proper individual to take due advantage of them, and calculated to turn them to the best account, is seldom to be found; but when, through indolence, pressure of other business, or absolute incapacity, they are for ever lost, and incapable of being recalled, the more gifted intellect cannot avoid contemplating, with an eye of absolute disgust, the perpetrators, whether by omission or commission, of this barbarous neglect, which must terminate eventually in reducing our professional literature, as deduced from post-mortem investigations, to an ebb far lower in the scale than that which it has hitherto enjoyed amongst the other nations of the earth.

We extract in full the following proposition, and one of the remarkable cases quoted in proof of the axioms which it is intended to substantiate.

"Paralysis of voluntary motion and sensibility being determined by a lesion of the entire thickness of the spinal marrow, the reflex action still persists in the paralyzed parts as long as the portion of the cord inferior to the lesion is perfectly intact; they cease to be produced when this portion is completely disorganized.

"CASE.—A workman, aged 50, fell from the top of a tree upon his back, and remained paralyzed as far as sensation and motion were concerned. The functions of the rectum and bladder are both destroyed; the prolonged decubitus on his back has produced bed-sores in the region of the sacrum, besides on several other parts of the dorsal aspects of the trunk. Three months after the accident, the injured man exhibited the following symptoms:—Complete paralysis; the lower limbs agitated from time to time by slight subsultus; insensibility of the trunk, bounded in front by the umbilicus, and behind by the eighth dorsal vertebra; the sphincters of bladder and rectum are both paralyzed; the flow of urine and fæcal discharges are involuntary and without cessation; on a level with the seventh vertebra a very considerable projection is apparent. The patient died three months and a half after the fall.

Cadaveric Autopsy.—The body of the seventh dorsal vertebra was fractured across in front of the transverse processes, and the superior fragment, as he lay on his back, was carried forward, so that the upper part of the broken bone was eight lines in front of the inferior; opposite this fracture the spinal marrow and its membranes were completely torn across, and there existed a distance of about an inch between the two extremities; the inferior was reduced to a soft pulpy mass, contained within the pia mater, and in its centre was a material more firm in consistence, and grayish in colour, corresponding to the demi-partition formed by the pia mater. The investing membranes, curled up at their ruptured extremities, were adherent to the ligamentous tissues that lined the rachidian canal, while the upper end exhibited a firmer character, a redder gray colour, and was also covered with a slight prolongation of the membranes."

This case presents two extraordinary features, one of which is the length of time that elapsed before the individual succumbed to the effects of an accident which, from its very grave and serious nature, we would have been inclined to believe must have proved fatal almost instantly; and indeed, from the history of the case, although no direct allusion has been made to it, there appears to be every probability that he ultimately fell the victim, not to the immediate injury itself, but to its consequences; as exemplified in those extensive ulcerations, with the intense constitutional irritation concomitant on them. The other circumstance which is especially deserving of attention is the persistency of the reflex motions, even after the utter disruption of all the connecting media, as evidenced by the involuntary agitation of the parts so far below the seat of actual lesion.

Here we must pause in our analysis of this work; but we consider that quite sufficient has been stated to show its general tenor, and to convey a fair idea of the care, precision, and judgment evinced by M. Parchappe, in the happy selection of his cases, through the very laudable desire of endeavouring to substantiate certain disputed points of nervous lesion; a subject which every candid mind must acknowledge has scarcely received that amount of patient and persevering consideration so liberally lavished on other morbid affections, the importance of which, to the welfare of mankind might be justly disputed by the one in question. In a field of inquiry so extensive, however, there appears to be ample scope for the talents and labours of every one; and we most sincerely trust that all to whom the opportunities have been confided will strenuously apply themselves to the task, and by making known the results that they may have obtained, earnestly strive to render the position which they occupy one of real practical usefulness, as eminently calculated to confer enduring benefit on their fellow-man, as to invest themselves with honour, emolument, and distinction—the fairly merited rewards of their philanthropic toil and application.

Children's Diseases. First Report of the Clinical Hospital for Diseases of Children, Stevenson-square, Manchester. Containing an Account of the Results of the first 530 *Patients there treated.* By A. L. MEREI, M. D., &c., and J. WHITEHEAD, M. D., &c. Manchester: Bradshaw and Blacklock. 1856. 8vo, pp. 52.

IT is not without a sense of our own shortcomings that we congratulate Drs. Merei and Whitehead upon their success in establishing a children's hospital in Manchester. We are satisfied that only in such establishments can such investigations be carried on as will result in placing this branch of medical science on a level with the other departments.

So far as the limits of the Report permit, it contains most valuable observations, and on one or two points some investigations of great interest. Our readers will recollect that in our review of Dr. Merei's work[a] we noticed his views upon infantile development, and his application of the period of teething, closure of the fontanelle, state of the chest and limbs, as a test. These views have been prosecuted with considerable success, and we have the result in this Report. Of 530 children, the development was good in 220, medium in 145, and bad in 165. Now from the observations made upon these children, the authors conclude that at the age of twelve months a child should have at least eight teeth, and that six is the minimum number compatible with favourable development. Further, that children of good development have generally completed the first dentition of twenty teeth at the age of two years. Of 73 badly developed children at the age of two years, only 10 had twenty teeth; 5 of them, eighteen; all the rest, sixteen or less.

Again, the data laid before us show that in the majority of favourably developed children the anterior fontanelle is ossified at thirteen months or before, whilst in the majority of badly developed children it is open at thirteen months. The comparative measurements of the circumference of the skull and chest afford (as far as the numbers go) a very decided test. Under the age of twelve months the circumference of the skull was almost constantly larger than that of the chest; from one to two years the skull frequently predominated still more; but in proportion as the child was robust, this was reversed. The same remark holds good at a later period; but even in badly developed children the disproportion diminishes; whilst in the well developed the disproportion is all in favour of the chest. If further investigation give similar results, it will be an important fact, both physiologically and practically.

Lastly, the power of walking is equally characteristic of the development: of 164 children of good development, 155 were able to walk before the fifteenth month was over; whilst, of 137 badly developed, 98 *commenced* walking only after the fifteenth month.

There are some interesting observations on the effect of food upon development. The children being divided into five classes, we find that in No. 1 the children had a good supply of breast milk, with a certain amount of farinaceous food; and of these children 52 per cent. had a good, and 20 per cent. a bad, development. In No. 4 the children had a scanty supply of breast milk, with other substantial food, but only 22 per

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[a] Vol. xx.

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cent. of these had a good development, 51 per cent. being badly developed. In No. 3 the children had sufficient breast milk for nine months and upwards, and of these, 77 were well developed, and 10 per cent. badly. In No. 5 the children had no breast milk at all, or for a very short time; 60 per cent. were badly, and only 10 per cent. favourably, developed.

As an illustration of the effects of wet-nursing alone, we have the cases of all the best developed and strongest children, 34 in number, and we find that 4 had breast milk alone to the eighteenth month or upwards; 7 to the fifteenth; 7 to the twelfth or thirteenth; 3 to the sixth or eighth; 4 to the fourth or fifth; 1 had abundance of breast milk, with bread and milk; and 1 insufficient breast milk, with bread and milk.

Now if we turn to the diseases treated at the Hospital, we find they are 785 in 530 patients, the numbers of the principal being as follows:—Developmental disorders, 59; rachitism, decided, 28; constitutional debility, 27; fevers, 20; anasarca, primary, 1; affections of the brain, 10; of the eyes, 35; of the ear, 7; of the mouth, 17; of the respiratory organs, 192; of the heart, 5; of the abdominal organs, 224; nervous disorders, 16; diseases of the skin, 45; of the scalp, 25, &c. The remarks of the authors upon each class of these disorders are of considerable interest, and we beg to direct our readers' attention to them. We shall, however, briefly notice their conclusions as to local influences upon the development and health of children. And, 1st. It is rather remarkable that there was no infantile epidemic prevalent, except hooping-cough. 2nd. Of diseases originating in chronic dyscrasy—a faulty condition of the blood, partly hereditary, partly acquired, amongst which in childhood stand paramount in importance scrofulous, tuberculous, and syphilitic affections—the Report is very favourable. Tuberculous occurred in about ¾ per cent. of the children, and this proportion is less than in any of the other children's hospitals. 3rd. On the other hand, the proportion of diseases arising from hygienic and dietetic causes is larger than in the hospitals of St. Petersburgh, Vienna, Berlin, Pesth, Munich, or Frankfort, being 4¾ per cent. This, we doubt not, will form the subject of future investigation; and, in conclusion, we cordially recommend this Report to the profession, and wish the authors the success they deserve.

On Uterin-Deviationer. Af Dr. F. C. FAYE, Professor i Accouchement, Fruentimmer-og Börnesygdomme, ved Norges Universitet.

On Uterine Deviations. By Dr. F. C. FAYE, Professor of Midwifery and the Diseases of Women and Children in the University of Norway. Reprint. 8vo, pp. 72. Christiania: Werner and Co. 1856.

IN the essay before us, which first appeared in the Norwegian Magazine of Medical Science (Norsk Magazin for Lægevidenskaben), the author, well known throughout Europe as one of the most distinguished cultivators of scientific midwifery, proves himself to be intimately acquainted with the English and continental literature of his subject. Our object in this notice shall, however, rather be to indicate the facts he himself contributes, and the opinions in support of which he brings them forward.

Referring to Dr. Bennett's views, as expressed in the third edition of his work on Inflammation of the Uterus, Professor Faye shows that the British author is inclined to regard a local and general treatment calculated to combat inflammation, swelling, and relaxation, as sufficient to remove the injurious influence of deviation, if not the abnormity itself; and that he expresses strong doubts as to the utility of the mechanical means employed in this affection by Simpson, Valleix, Kiwisch, Rigby, Smith, Mayer, &c.; which doubts are corroborated by the opinions of Dr. Duncan, of Edinburgh, and by the ample Report of Depaul to the French Academy.

The author, while he acknowledges that the writers alluded to are fully justified in bringing forward the favourable results of the local treatment of inflammation of the neck and walls of the uterus, and that cauterization, combined with other suitable treatment, has been found especially useful, expresses his surprise at Dr. Bennett's statement that he never met a case suited to a regular attempt at reposition, inasmuch as an inflammatory state in general contra-indicates the employment of mechanical means; and he further expresses his conviction, that cases of deviations of the uterus do occur, uncomplicated with any considerable degree of inflammation, wherein reposition is not only well borne, without the necessity of long preparation, but where it even produces so decided an improvement in affections of many years' standing, that the patients themselves feel as if their sufferings were charmed away; and he adds, that this opinion is confirmed by several cases published in Valleix's

Lectures. In illustration of his views in general, he brings forward, from his own practice, two cases of retroflexion of the uterus successfully treated by mechanical means.

Professor Faye adds a few cases of anteversion, and anteflexion, also treated mechanically, and concludes his essay with some general observations on the treatment of the deviations therein described.

Calisthenics ; or, the Elements of Bodily Culture. By Henry de Laspée. London: Darton & Co. 1856. 8vo. pp. 170.
A New System of Calisthenic Exercises. By Henry Cost. London: Turrel, Oxford-street. 1856. pp. 110.

In a large volume, replete with indifferent engravings, M. Henry de Laspée enters on the discussion, and attempts the elucidation of the important subject, "Physical Education." His work purposes to embody the experience of many years, and is declared by the author "to differ from all others which have been published on the same subject." We are glad to accept this assurance, as being, to a certain extent, a guarantee that many of those fearful distortions, which he has miscalled "exercises," are less universally practised or taught than we might otherwise have apprehended. Adopting as the basis of his system the principles advocated by Pestalozzi, "the usefulness of whose method consists in the primary culture of the faculties and senses on which their special adaptation to the purposes of life is dependent," the reader, the teacher, and the student are informed that "the author has entered into deeper principles, and sought to meet higher ends than his predecessors." Giving M. Henry de Laspée every credit for the best intentions, we can only regret that before he undertook a work so important, and one, which, if based on sound principles, would not fail to be of great value, he did not render himself, in some measure, acquainted with, at least, the ordinary phenomena appertaining to vital and physical action, and those laws which nature has adopted for the better preservation of bodily strength, as well as the greater perfection of our organism. Had he done so, we are satisfied he would have hesitated, ere, on educational grounds, advocating a series of pantomimic attitudes, many of which would prove irksome and difficult to a pantaloon.

It is now admitted by all who have paid any attention to the subject, that the physical and social, as well as the mental and moral condition of the community requires to be carefully maintained. The *mens sana*, unless *in corpore sano*, is found to lack that firm guidance and support essential for its proper exercise. The material and immaterial constitutions, in their mutual sympathies and innumerable reactions, must be equally considered. If one be neglected, that harmony essential for healthy action being wanting, the complex machine goes faultily on. Much practical good is daily resulting from the recognition of this reciprocal influence of mind and body, visible equally in the improved homestead and healthy appearance, as in the intelligence of the growing masses attendant on our public schools. M. Henry de Laspée, while recognising the great importance of physical influences, has certainly taken a very wide range in their estimate, especially in reference to the results which he conceives were attributable to the gymnasia existing amongst the Greeks and Romans. To these schools he would assign many of the evils of those states in their earlier periods, and, identifying their exercises with heathen principles, find in the prevalence of Christianity ample arguments for the abandonment of such practices.

> "The objects of Christianity," writes M. de Laspée, "differ essentially from the objects of Heathenism; yet, in reference to human culture, for many centuries after the greatness and power of the Greeks and Romans had vanished from the face of the earth, their system still continued as the basis of physical education; the object they sought being still the aim of existing nations."

M. de Laspée here adopts an erroneous hypothesis, and arrives at even a more absurd conclusion; or, we should rather say, attempts to establish, as an inference, his preconceived notions. Not satisfied with attributing to the gymnasia of Greece and Rome the debauchery and depravity which ended in the overthrow of their States; forgetting that long before their decadence these schools had but a nominal existence, M. de Laspée would assign a new cause for the Germanic revolution of 1848—the undue physical development of the inhabitants consequent on their heathenish exercises—and would, therefore, warn the English and other Governments from falling into the same error.

This is, indeed, riding a hobby with a vengeance!

Experience has established, beyond doubt, that the physical capability of a people is identified with its social happiness; and that much of its moral and intellectual progress is attributable equally to the power as the will to do. M. de Laspée herein seems to have fallen into a twofold error; first, in drawing a parallel without an analogy; and secondly, in arriving at an affirmative conclusion from conflicting premises.

In the third division of the work, devoted to "Combination of the elementary positions," the author, having portrayed exercises in which one of the shoulders is made to assume an unnatural posture, adds:—"Although there must be two *eyes*, they must not be practised in the manner here adopted, as this might lead to dangerous results." Are dangerous results only to be apprehended where the eyes are concerned? is an inquiry that might here safely arise. The object of M. de Laspée is to guide, assist, and so support nature. Those who attempt more go beyond their just sphere; those who are satisfied with less imperfectly fulfil the duty they have undertaken. Suitable guidance seldom fails to accomplish both the others. This guidance, unless resulting from a sound physiological study, may, as in the case before us, lead into error. The first principle of calisthenic exercises should be a preservation of that muscular harmony indicative of symmetry and health. It is quite possible by practice to attain a useless command over any of the voluntary muscles, which, when acquired, is labour lost and strength wasted. Our movements are wisely adapted for the purposes of our being, and are regulated by, and in their turn direct, a muscular and osseous apparatus far surpassing all human mechanism. As between mind and body a certain relation is essential for health, so between the several members a reciprocal interchange of duty maintains the efficiency of the whole. Riding, running, walking, leaping, call into action muscles having a certain relation, whose co-operation enables these several processes to be accomplished. Exercises having as their object the better development of such muscles cannot fail to be useful; while, on the other hand, the practice of attitudes which no possible combination of natural movement can ever demand, is not only useless, but, if not injurious, is certainly little calculated to impart that ease of carriage and grace of gesture it seems to be the intention of M. de Laspée to inculcate.

We gladly turn from this elaborate volume to a much more unpretending work. Mr. Cost's name is familiarly known as the inventor and patentee of an instrument that has found its way into many studies, and which has long since received the approbation of the profession. We allude to the Patent and Elastic Calisthenic Chest Expander, a long name for a simple and very useful apparatus. His work purposes to be a series of instructions for exercises calculated to develop without fatiguing the muscles. We would gladly see this instrument generally adopted, more especially among females, for whom it is admirably suited. The principles advocated by Mr. Cost are those which a natural judgment, guided by sound views of vital action and muscular movement, have dictated.

The question of physical education is one which has heretofore not received that attention commensurate with its importance. Our public institutions and large seminaries are, in admitting its necessity, we trust, preparing the way for some competent author to fully treat so interesting a subject to all. Medical men, especially those having charge of large numbers of young people, must have experienced the deficiencies which exist in this respect, deficiencies for which a solemn walk, or a serious, noiseless half hour's play, are but a sorry recompense,--we will even go further and add, which the tweedling of the thumbs, or upturning of the eyes depicted in the work we have so little approved of, will supply.

M. de Laspée is apprehensive that gymnastic exercises will unduly develop the system. In avoiding Scylla, he rushed into Charybdis. We are far from giving an unqualified approval to their use, unless directed by a sound judgment, and presided over by a responsible instructor. We do not, however, join in his fears, that our youths may thereby become as "Hercules." Let us have boys with healthy bodies and active frames; with animal spirits bounding and full. While their systems are free from disease, and their hearts devoid of care, we have little fear but that their young energies, in proper hands, will, in acquiring maturity, more fully realize our just expectations, and more truly accomplish the purposes of our being.

Quarante Années de Pratique Chirurgicale. Par Ph. J. Roux. Tome second, Maladies des Artères. Paris: Victor Masson. 1856. pp. 476.

The Commission which took charge of the publication of this work has brought its labours somewhat abruptly to a termination. In the preface to the first volume we were told that the composition of four volumes was already complete when M. Roux's death took place. This statement would appear to have been made rather hastily, for M. Broca, who is the responsible editor, now speaks of the two remaining volumes as though they were so imperfect that to publish them were to run the risk of doing an injustice to the memory of the dead. Perhaps this discrepancy is to be accounted for by a combination of circumstances. Some time has elapsed since, in the first burst of sentiment, the Society of Surgery in Paris intrusted to a distinguished Commission the notes of their deceased confrère. Their ardour may have somewhat cooled, and calmer reflection and the judgment of a more extended circle may have decided, and perhaps correctly, that Roux's memory will be more honoured by the withholding than by the publishing of his imperfect works. Still, we must confess to a certain amount of disappointment when we heard that volumes on tumours and resections, on the uncertainty of diagnosis, and on the primary and consecutive accidents of operations, are withheld from us. The last subject, when fully and honestly handled, must ever be of the utmost value to the practical surgeon. Few men have the courage to lay fairly before the public the difficulties which they have encountered and contended against in their successful and unsuccessful cases, and fewer still have a sufficient amount of self-knowledge to be thoroughly conscious of the various causes of failure. We are not sure that M. Roux was one of the latter class, but, without doubt, he belonged to the former. In few works will such candid confessions of errors be found as in the one before us, and we have reason to believe that, imperfect as it would be, the fourth volume would have been of immense value, from the candour with which failures as well as successes would have been discussed. Our disappointment is not lessened by the character of the present volume. Its subject is the Diseases of Arteries, but, as the author himself observes, it were more correct to entitle it the "Ligature of Arteries." Our readers are most probably aware that in Paris, as elsewhere, the treatment of aneurism, by compression, has been looked on as an innovation to be resisted. All the conservatism of routine practice has been enlisted against it, and it is only by slow degrees, and by the perseverance of a few, and these among the junior surgeons, that it has gained any footing in France; and as this advance has only been made within the last two or three years, it is no subject of surprise, albeit of regret, that the trivial mention of compression which M. Roux makes is confined to the earliest period of his practice, and that no scientific explanation of its action is attempted. Hence, except as a record of cases, this book is almost valueless; and yet, so ably are they detailed, and so interspersed with sound practical reflections, that few who read the book will regret the labour. As the epistolary form of the work renders an analysis of its contents impossible, we shall best employ the space we can afford by extracting a few valuable precepts or remarkable experiences, as well as by pointing out a few errors, both in theory and practice.

M. Roux throws no additional light on the cause of aneurism. Ignoring the internal aneurisms which must have their origin in vital causes, he seems to incline entirely to the mechanical theory of alternate flexion and distention of the vessel; nor does he even carry out this theory in a satisfactory manner: for example, in speaking of the causes of popliteal aneurism, the most frequent of all external aneurisms, he omits the evident fact of the popliteal artery being the only one of the larger trunks which is situated directly in the angle of flexion. Into the causes of the atheromatous degeneration of arteries he does not inquire. Indeed, we have found that French surgeons are still ignorant of them, and that the explanation almost universally received here is unknown on the Continent: we allude to the fact, that the atheromatous degenerations are generally, if not always, consequent on the habitual use of the stronger forms of alcohol. The only thing approaching to novelty on this head is the following paragraph:—"There is not any compression exerted on the popliteal artery by the aponeurotic arch which gives attachment to the solei muscles when these muscles and the gastrocnemii contract; but it may not be impossible that a certain effort of the blood against the walls of the artery results from the compression exercised by these muscles during prolonged and powerful contraction upon the secondary arterial branches which occupy their interstices."

It seems strange to us, who look upon the Hunterian operation almost as a thing that has passed away, never to return, to read the confessions of one who, less than fifty years ago, with modest hesitation, introduced the knowledge of it into France. It is still more strange to read the details of the older operation by opening the sac, an operation which Roux in his young days adopted, although unwillingly, and in deference to his seniors. His own predilections were all through life in favour of the Hunterian operation, or rather of Scarpa's modification of it. The form and mode of ligature which he adopted, and to which he seems to have clung pertinaciously through evil report and good report, is one that we cannot say we approve of. We shall give his own account, extracted from the details of a case in which he operated by opening of the sac:—"All these ligatures were riband-shaped, that is to say, a little wide, flattened, and composed of a certain number of threads held together by wax. I had placed two superior ligatures, not for the purpose of reserving one as a precaution against hemorrhage, as was the custom formerly, but that each should be separately tied. They were tied over a small cylindrical body, placed in immediate contact with the artery, so that the vessel became in some sort flattened, and not circularly constricted. I had acted thus before in some operation performed after the Hunterian fashion, and I continued the practice in almost all my ligatures of larger arteries." In a subsequent comparison of this mode of procedure with the ordinary fine round ligature, we find the following:—"In the former method the expectation is, that the artery shall be cut slowly by the ligatures; and the operator reckons on the arrest of the current of blood, and the formation of an internal coagulum, for the obliteration of the artery; in the latter, which, since the time of Jones, reckons numerous supporters, the internal and middle coats of the artery are bruised; the external or cellular alone supports the action of the ligature. Soon, under the influence of an internal inflammation, there is production of plastic material, and this becomes the means of the obliteration of the vessel." Here we pause to remark that there is a grave error in this passage, an error which accounts for much of the apparent obstinacy of Roux in using this form of ligature. It will scarcely be denied by any physiologist of the present day, that without obliteration of the artery there is no safety against secondary hemorrhage; and we think it equally unquestionable that this obliteration cannot be brought about without plastic exudation. Now there is no problem so well proved as that the presence of a clot of blood, so far from aiding in the organizing process, is a direct obstacle to it; inasmuch as all the components of the clot except the fibrine have to be removed before organization can begin. Hence, Roux's favourite plan is more likely to be followed by secondary hemorrhage; that it is also more likely to give rise to phlebitis and diffuse inflammation, seems so plain that we are amazed a surgeon of such experience as Roux did not perceive it.

Among remarkable cases, which, as already stated, form the principal attraction of the volume, we find three cases of double popliteal aneurism; also, one of a relapse, in which, after the sac had been filled up for a time, pulsation returned permanently.

In a case of traumatic aneurism at the bend of the elbow, in which hemorrhage came on from sloughing of the sac, he tied the brachial artery in the middle of the arm with his usual two ligatures. As the hemorrhage was not controlled, he was obliged at once to lay open the sac and tie the artery above and below. There appeared no object in retaining the ligatures on the brachial high up, and they were removed eight or ten minutes after their application; yet these few minutes were sufficient to bring about the complete obliteration of the artery, and its conversion into a fibrous cord, thus proving that sometimes, at least, his theory of gentle compression must be untenable. With the French controversy, which strives to give the credit of Hunter's plan of ligature to Anel and Desault, it is quite too late in the day to concern ourselves—even the French pay homage to truth by naming it the Hunterian operation. Suffice it to say, that the earlier French operators lost all claim to merit in the matter, by refusing to follow Hunter's lead, and persisting to tie the artery close to the sac, as Desault had done. To Roux is due the great credit of introducing and naturalizing Hunter's method; his journey to London in 1814 seems to have had much to do with this result. The present opponents of the Dublin method would do well to follow the example of his humility, and to condescend to learn even from the Irish. We are aware that some of the younger men are not unwilling to do so, and that, among the Follins, Brocas, and those of their standing, the treatment of aneurism by compression is slowly but surely making way.

In discussing the cause of gangrene after ligature mention is made of wound of the vein. No notice, however, is taken of obstruction of a vein from another cause, namely, the spread of the adhesive inflammation of the artery to the contiguous portion of the vein. This, we have no doubt, is not uncommon, even when the greatest care has been taken not to wound the vein. The operation proposed and practised by Professor Porter obviates this in some measure. He takes up the artery near Poupart's ligament, at a point where the vein is not in immediate contact with it.

Roux gives the following *resumé* of his experience in thirty-three cases:—Gangrene followed in three cases; in two with fierce and fatal rapidity; in a third, which was treated by Boyer, it came on slowly, twenty days after the ligature was applied, and two days after it came away; it seems to have resembled dry gangrene, and probably depended upon similar causes; the account of the autopsy is brief and unsatisfactory. He lost three by phlebitis or diffuse inflammation, and three by secondary hemorrhage; the latter seemed to come on at any time prior to the closing of the wound. One case began to bleed on the fifteenth, another on the thirty-second, and the third upont he fiftieth. In all, the external wound was still open. This fact alone justifies us in absolutely rejecting the clumsy mode of ligature to which he adhered; we should as soon return to the presse-artére of Deschamps.

The period at which ligatures come away is very variable. A case in which ligatures were placed on the divided ends of a wounded artery strikingly illustrates this. The superior ligature came away on the fourth day, while the inferior remained attached for forty-one.

In the letter which treats of secondary hemorrhage, we find some practical conclusions, from which we extract the chief points:—

1. That in gunshot wounds secondary hemorrhage does not always depend on separation of sloughs occurring before obliteration of blood-vessels.

2. That in cases complicated with fracture another cause may exist, namely, the action of sharp fragments upon vessels softened by inflammation.

3. That in certain cases (general debility) it may arise from the weakened capillaries alone.

4. That the hemorrhage which is immediately produced by an erosion or rent of an arterial trunk, or large branch, is slower than that which follows separation of the sloughs, the latter occurring from eight to ten days after the injury, the former seldom before the fifteenth or twentieth.

5. That hemorrhage arising from spiculæ is most frequent in the thigh, perhaps because the surgeon is less bold in his incisions, and in the removal of all spiculæ, and also, probably, because perfect repose of the limb cannot be insured.

6. That great variety may exist in the amount of blood lost, in the rapidity or suddenness of the hemorrhage, and, of course, in the immediate and ultimate effects on the patient.

Finally, that, although in theory it is advisable always to tie the artery immediately above and below the bleeding point, yet in practice it will more frequently be found better to tie the main artery of the limb at a distance from the wound, and in many cases no other operation can be done.

Such are some of the precepts and experiences of the veteran Professor of the Hôtel Dieu. It is impossible to do justice to his memory by a review of his posthumous works, incomplete and imperfect as they are. The epistolary style he had chosen is one which renders anything like an accurate analysis impossible, and we are conscious of being quite unable to convey to our readers any just idea of the value contained in these letters. To read them recalls to our mind the pleasant, familiar style of his clinical remarks, and the beaming countenance of the good old man.

Supplement to Lizars' Anatomical Plates of the Human Body Accompanied with Letter-press Descriptions and Letters of Reference to the Plates. By JOHN LIZARS, F.R.S.E., &c., Edinburgh: W. H. Lizars, 1856. Folio, pp. 13. Plates 10.

FOUR and thirty years have now elapsed since the publication of Lizars' Anatomical Plates, and what surgeon of the present day does not refer to them with pleasure and satisfaction?—with pleasure, for he learned out of them when a student; and with satisfaction, because by their accurate representations every difficulty was solved. This valuable book appeared at a time when it was greatly needed, and it was extolled by all the eminent teachers of the day. It would be superfluous to say another word relative to it.

These remarks are drawn from us by the appearance of a very instructive series of Plates, in the form of a Supplement to the great work, from the preface to which may be learned the reasons for its publication.

"I consider it my duty," writes Mr. Lizars, "in issuing a new edition, to append a Supplement containing every recent discovery, in order to render the work (which has obtained so wide a circulation, and received such a universal amount of professional support) commensurate with the present state of knowledge." The minute anatomy of the nerves of the head and neck have been beautifully illustrated from Arnoldi, and those of the hand from the researches of Pacini, while the dissections of the female breast, and male testis, have been accurately copied from Cooper's incomparable representations; and accompanying each of the latter is a very concise description.

In addition to these we have several new and instructive views of the male perineum and pelvis, bearing particularly on the diseases and injuries incidental to this part, conveying the most valuable information; and here we may assert our opinion, that no living surgeon is more competent than Lizars to afford practical instruction relative to the operative surgery of this region. In concluding this short notice, we would say, the task has been well done, and the work should be in the hands of every student and teacher in surgery. The latter part of the "Supplement" is peculiarly interesting, as bearing upon points of surgery by which Mr. Lizars has greatly raised his fame; and the accuracy of the information here set forth may be best judged of by a short extract from the preface—thus, Mr. Lizars writes:—"My own attention for a considerable period has been engaged in investigating the diseased state of the urethra and perineum, connected with, and dependent upon, stricture of the urethra. My friend, Mr. A. M. Edwards, has made very masterly dissections, exhibiting the normal condition of these parts; and I have to tender my best acknowledgments to Professor Goodsir for his liberal assistance in enabling me to produce such representations."

A Treatise on Therapeutics and Pharmacology, or Materia Medica. By G. B. Wood, M.D., &c. Philadelphia: Lippincott and Co., 1856. 2 vols. 8vo, pp. 840 and 901.

The volumes before us are from the pen of Dr. Wood, of Philadelphia, first known as a medical author in this country by his conjoint work with Dr. Bache, "The United States Dispensatory," modelled on the same plan as the original work of Dr. Lewin, succeeded by those of Duncan and A. T. Thomson, and which passed with deserved success through several editions. More recently he has extended his fame as an able writer, and sound practical physician, by his learned work on the Practice of Medicine, which has become, to a great extent, a text-book, even in the British islands, and which we reviewed favourably in the sixth volume of our present series. We wish for Dr. Wood's sake he had permitted his character as an author to rest on the success of the publications we have just mentioned, for we do not think it will be much advanced by the two volumes now before us. While they are deficient and imperfect as a complete treatise on the Materia Medica, they do not appear to us to be required as supplementary either to his Dispensatory, or to his Practice of Medicine; and were it not for the following apologetic explanation given by the author in his preface, we should really be at a loss to guess at his reasons for giving them to the profession:—

"In preparing the present work for the press, the author claims to have been actuated, in part at least, by motives higher than those of personal credit, or pecuniary advantage. Though he pretends to no insensibility to these ordinary influences, he believes that he is obeying a call of duty in laying before the profession those results of his research, experience, and reflection upon the subject of Therapeutics, which have heretofore been confined to the narrower limits of classes of medical students. His former lectures constitute the chief substance of the present Treatise, though considerably extended, and much elaborated. Perhaps he may be laying himself open to a charge of overweening self-estimation, in supposing that he can add to the existing mass of knowledge, or improve existing views in this department of medicine, in a degree which may justify the publication of a book like the present; but he is unwilling to leave the world without giving some degree of permanency to what he has so long taught, and consoles himself with the consideration that, should the work prove of less value to the profession than he ventures to hope or anticipate, it is not likely to do serious injury, and, at the worst, will be merely superfluous."

Dr. Wood divides his work into two parts, as has been usually done by writers on this subject: the first of which he entitles "General Therapeutics and Pharmacology;" and the second, "Special Therapeutics and Pharmacology." Under the former head are considered the general operation of medicines, the effects resulting therefrom, and the influences which may modify both; also their several modes of administration or application: the division being concluded with a plan of classification which presents nothing either novel or sufficiently important to entitle it to supersede, we might almost say, any of the many systems of classification in use by modern writers on the Materia Medica. In the second division an account is given of the several medicinal agents employed in the present day, in the order of classification proposed by the author,—the drugs in use in the United States, especially those which are indigenous there, and which are but little known or employed in this country, having, of course, a much larger share of attention than is given to them in works written by European authors. We shall, therefore, select Dr. Wood's account of an important medical plant, a native of America, as presenting the most favourable specimen of the information to be found in these volumes; this we do, because it would be quite impossible to analyze or attempt a summary of a book of this character, and we are anxious to let our readers judge for themselves of the nature of the contents, and the style adopted by the author. We extract entire the article on Lobelia:—

"*Origin. Lobelia Inflata, or Indian Tobacco*, is a small, annual or biennial, indigenous plant, growing abundantly in most parts of the United States. Though the seeds are the strongest portion, the whole herb is officinal, and is directed in our Pharmacopœia, under the name of lobelia. It should be gathered in August and September, when the fruit is most abundant. Sometimes it is kept simply dried, sometimes in powder, and not unfrequently comminuted and compressed in the form of small oblong cakes.

"*Properties.* Lobelia is of a greenish colour in powder, of a feeble, somewhat irritating odour, and of a taste which is slight at first, but soon becomes acrid and nauseating, and spreads with a strong and peculiar acrimony through the fauces, not a little resembling that of tobacco. The herb imparts its virtues to water and alcohol. They are injuriously affected by a boiling heat. They probably reside chiefly, if not exclusively, in a peculiar organic alkaloid, called *lobelina*, which exists in the herb in combination with an acid. There is also a very small proportion of volatile oil, upon which its odour depends, but which probably possesses little medical efficiency.

"*Lobelina* was first procured in a pure state by Professor Procter, of Philadelphia, who obtained it from the seeds by the following process. A tincture, prepared by treating the seeds with alcohol acidulated with acetic acid, is evaporated, and the resulting extract mixed with water and magnesia, by which the alkaloid is separated from its saline combination. The mixture is agitated with ether, which dissolves the lobelina, and yields it in an impure state by evaporation. It is purified by dissolving it in water, adding sulphuric acid in slight excess, boiling with animal charcoal, then separating it as before by magnesia, filtering, agitating the liquid with ether until wholly deprived of acrimony, and allowing the ethereal solution to evaporate.

"Thus obtained, lobelina is a yellowish liquid, lighter than water, of a somewhat aromatic odour, and a very acrid and durable taste. It is soluble in water, but more so in alcohol and ether, the latter of which separates it from its aqueous solution. It has an alkaline reaction, and forms salts with the acids, most of which are soluble and crystallizable. With tannic acid, however, it forms an insoluble compound. At a boiling heat it is decomposed. A drop of it given to a cat rendered the animal prostrate and nearly motionless, with dilated pupils, for an hour; and the effects had not quite disappeared at the end of fifteen hours. It neither vomited nor purged.

"*Effects on the System.* Lobelia is locally irritant, and, in its general influence, sedative to the nervous and circulating systems. In certain doses it operates as a nauseating emetic, and sometimes as a cathartic, and, in smaller doses, is expectorant and diaphoretic.

"When chewed in small quantities it often produces, along with the peculiar acrimony in the mouth, fauces, and œsophagus, giddiness, headache, and general tremors, and at length, if continued, nausea and vomiting. In a larger dose, it acts promptly as an emetic, with distressing and continued nausea, copious sweating, feeble pulse, pale skin, and great general relaxation. Sometimes, as from digitalis, the pulse becomes intermittent. The Rev. Dr. Cutler states that it produced in himself a prickly sensation throughout the system, and a smarting sensation in micturition.

"*Poisonous Effects.* Lobelia in over-doses is capable of acting as a violent poison, and, being a favourite remedy with a certain class of uneducated empirics, has been in their hands the cause of numerous deaths, both in this country and Great Britain. At an inquest held in England, in November, 1853, on the occasion of a death from lobelia, Dr. Letheby, Professor of Chemistry in the

London Hospital, stated that thirteen cases of poisoning had occurred from that drug within the three or four preceding years, and that, in six of them, a coroner's jury had brought in a verdict of manslaughter. (*Lond. Med. Times and Gazette*, May, 1854, p. 491.) When lobelia vomits, it is, like tobacco, lest apt to produce fatal effects; and, as this happens in most instances when large doses are taken, the ignorant practitioner, thinking that he has proved the innocence of the medicine by his experience with it, gives it freely and without hesitation in all cases. But in some individuals it fails to vomit, even in very large and repeated doses; and it is in these cases that death most commonly results. It is wonderful with what recklessness, according to published reports, the poison has been sometimes thrown in, dose after dose, in the cases of these insusceptible individuals, in the expectation that it would at length operate in the desired manner.

"The effects of a poisonous dose of lobelia are usually a peculiar sensation of burning and acrimony in the fauces and œsophagus, intense epigastric distress with or without vomiting and purging, general anxiety, a feeble pulse, faintness, muscular tremors and relaxation, profuse sweats, coldness of the surface, vertigo, and, finally, extreme prostration, delirium, stupor, sometimes convulsions, and death. From one poisonous dose, the fatal result may take place in five or six hours; but frequently the effect is produced by a succession of doses, repeated hour after hour, or day after day, so that it is impossible to determine the precise duration of the poisonous process. Nor is the quantity well determined, which will ordinarily prove fatal. In fact, the susceptibility to its effects is so variable, that no precise statement can be made on this point. Much, too, depends upon the occurrence or non-occurrence of vomiting. Dr. Letheby found in the stomach of a woman who had been poisoned with it, 110 grains; in the case of a man, a tablespoonful of the seeds; and in a child three years old, fifteen grains of the seeds in the bowels. He stated, in reference to the first instance just mentioned, that he had known much less than that quantity produce death, and thought that one-third of the amount found in the stomach would have been sufficient to kill the patient. (*Lond. Med. Times and Gazette, as above;* also, *March*, 1853, p. 270.) It was the seeds that appear to have been given in these cases; and, as they are probably at least twice as strong as the herb generally, allowance must be made in estimating the poisonous dose of the latter. In most cases recorded, the quantities mentioned are quite indefinite, though often stated as large. From all that I have seen, I should infer that a drachm of the dried herb would be a dangerous dose, which ought not to be hazarded at once; though, if it should vomit, the patient might experience no serious inconvenience; and much larger quantities have, no doubt, often been given with impunity. Inflammation of the stomach and bowels has been noticed after death. But the probability is that the poison destroys life through its influence on the encephalic centres, especially that of respiration in the medulla oblongata; for, in animals poisoned with it, the heart continues to act after breathing has ceased. This fact was noticed in the experiments of Mr. Curtis and Dr. Pearson upon hedgehogs and cats. They state also that the lungs and the venous system generally were congested, as uniformly happens on death from asphyxia, and that the blood was fluid. (*Ibid.*, Aug. 1850, p. 285.) The treatment of poisoning by lobelia is the same as in the case of tobacco.

"*Mode of Operating.* The local irritant properties of lobelia, as of digitalis and tobacco, may give rise occasionally to a sympathetic excitement of the circulation; but the direct effects of the medicine, after absorption, are undoubtedly, I think, sedative. From the experiments upon animals above mentioned, and from the intense nausea produced by the medicine, it might be inferred that its influence is prominently directed to the nervous centres which govern the functions of the respiratory organs and the stomach; and that the heart is secondarily involved; but more numerous and diversified observations are necessary to justify a positive conclusion upon these points. That the medicine is absorbed has not been absolutely proved; but may be fairly deduced from the strong analogy between its action and that of tobacco; and from the fact that, when injected into the rectum, it produces the same nausea, vomiting, profuse perspiration, and general relaxation as when taken by the stomach.

"*Therapeutic Application.* Lobelia was used as a remedy by the aborigines, and was long empirically employed before it was adopted by the regular profession. It was first brought into general notice by the Rev. Dr. M. Cutler, of Massachusetts. In a communication published in Thatcher's Dispensatory, he speaks of its extraordinary efficacy in the relief of spasmodic asthma in his own case, in which he was induced to employ it by the representations of Dr. Drury, of Marblehead, in September, 1809. (Barton's *Veg. Mat. Med. of U.S.*, i. 191.) Since that time it has been much employed in the same and other spasmodic affections, though the use of it has been greatly abridged by the unfavourable results of its abuse, and the unfounded fears originating in this cause. When properly employed, lobelia is probably as safe as any other medicine acting powerfully on the nervous system; certainly quite as safe as tobacco, which it resembles in its effect, though considerably weaker.

"It is chiefly with a view to the relaxation of spasm, that lobelia has been used as a sedative. Almost all writers unite in bearing testimony to its occasional extraordinary efficacy in the *paroxysm* of *spasmodic asthma.* It is, on the whole, the most efficacious remedy that I have myself employed in that affection. Given in the dose of half a fluidounce of the tincture, it generally produces nausea and vomiting, and not unfrequently affords prompt relief. I prefer, however, administering it in the smaller doses of one or two fluidrachms, repeated every half hour, hour, or two hours, until it excites nausea, and maintaining a moderate amount of this

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condition until the spasmodic symptoms are relieved. Should catarrhal inflammation, as not unfrequently happens, accompany the spasmodic attack, it may be proper to precede its use by bleeding, and to employ the powder preferably to the tincture, in consequence of the alcohol contained in the latter. Like all other remedies, however, it sometimes fails in asthma; though I do not think I have ever used it without benefit.

"Even in the *dyspnœa* connected with chronic organic disease of the lungs and heart, especially when it occurs paroxysmally, the remedy may be employed with advantage.

"I use it habitually in *bronchial inflammation*, after due depletion, whenever I have reason to think that it is in any degree complicated with spasm of the bronchial tubes. It operates here not only as a nervous sedative, but also as an expectorant. It should, however, be associated with other expectorants, as tartar emetic, ipecacuanha, or squill.

"In *pertussis* it has been recommended by the late Drs. W. P. C. Barton and Eberle, who employed it in several cases with unequivocal advantage. Dr. Eberle gave from fifteen to twenty drops of the tincture, with ten or twelve drops of syrup of squill, every two or three hours, to a child between one and two years old. He also found it, in combination with extract of belladonna, very efficacious in mitigating the disease. (*Treat. on Mat. Med. and Thérap.*, 4th ed., i. 88.)

"It has also been recommended in *croup;* and, in the catarrhal variety of that affection, without false membrane, it will often prove very serviceable by relaxing the spasm. But it is probably in no degree superior to tartar emetic, and, from the uncertainty of its dose, and the danger of its abuse, is not advisable in that affection, unless as an adjuvant of other measures, when simple emesis has failed to produce relief. I have in this way used it with apparent advantage. To the pseudo-membranous variety it is inapplicable.

"In *strangulated hernia*, it was employed with success by Dr. Eberle; half a pint of a strong decoction of the fresh herb having been given by enema, followed soon afterwards by half the quantity. Distressing nausea came on with profuse perspiration, and universal relaxation, in which condition the hernia was reduced without difficulty. (Barton's *Veg. Mat. Med. ut supra*, p. 198.)

"Lobelia is stated also to have proved useful in delivery, by relaxing rigidity of the os uteri, being given in small doses so repeated as to occasion slight nausea. (*Am. Journ. of Med. Sci.*, xvii. 248.)

"It is a favourite remedy with the practitioners calling themselves eclectics, who use it in most spasmodic diseases, besides those already mentioned, as in *epilepsy*, *chorea*, *hysteria*, *tetanus*, *cramps*, *and convulsions.* They also employ it externally as an anodyne in sprains, bruises, rheumatic and neuralgic pains, spasms, &c. In most of these complaints it may no doubt be used with occasional benefit.

"It is contraindicated by irritation or inflammation of the stomach and bowels.

"*Administration.* The dose of the powder, as an emetic, is from ten to thirty grains; as a nervous sedative and nauseant simply, five grains, repeated every hour or two, the quantity being increased or diminished according to the effect produced, and the medicine suspended if vomiting or prostration ensue.

"The *Tincture* (TINCTURA LOBELIÆ, *U.S.*) is made in the proportion of four ounces to two pints of diluted alcohol. Consequently, supposing the herb to be exhausted, a fluidounce would be equivalent to a drachm of the powder. The emetic dose of the tincture is about half a fluidounce; the nauseating and sedative dose, a fluidrachm.

"An *Ethereal Tincture* (TINCTURA LOBELIÆ ÆTHEREA, *Lond. Ed.*) is directed by the London and Edinburgh Colleges; being prepared with spirit of ether, instead of diluted alcohol. It is probably in no respect preferable to the simple tincture; while the ether renders it unnecessarily, and sometimes injuriously, stimulating. Should lobelia and ether be simultaneously indicated, it would be better to use the simple tincture with Hoffmann's anodyne. The dose is the same as of the preceding preparation."

Anxious to do full justice to an author who has already acquired so much renown as Dr. Wood, we have rather trespassed on our pages by giving this long extract. We do not, by any means, wish to condemn his work now before us, but we feel compelled to say, that with such books in the English language as those of Pereira and Christison, or the last editions of Thomson's Materia Medica and Paris' Pharmacologia, not yet at all out of date, and which, perhaps, it more resembles, we cannot discover any useful purpose to be attained by so bulky an incumbrance being added to the rather overburdened literature of the Materia Medica, and we are unable, therefore, however anxious so to do, to commend its publication, or recommend it to our readers.

Pathological Chemistry, in its application to the Practice of Medicine. Translated from the French of MM. BECQUEREL and RODIER. By STANHOPE TEMPLEMAN SPEER, M. D. London: Churchill, 1857. 8vo, pp. 566.

IN the seventeenth volume of our present Series we reviewed the original French edition of MM. Becquerel and Rodier's Pathological Chemistry, and expressed in very strong terms the high value we placed upon it, and how important an addition we considered it to be to medical literature. It is not, then, surprising that we cordially welcome its appearance in an English dress, whereby it is rendered more directly accessible to the majority of our readers. Dr. Speer has, we think, done good service to the profession by undertaking this translation, which he has both faithfully and ably executed; and we, therefore, thank him for furnishing us with what cannot but be regarded as a desideratum, for we had no work in our own language so full or so complete on the subject of which it treats.

In our former review we noticed specially the researches of the authors on the blood, a condensed account of which we gave; and we, therefore, now propose to refer to some of the other chapters in this volume, the subjects treated of in which we then also mentioned. Passing over the third chapter, which is devoted to a consideration of the fluids secreted by the conglomerate glands, we shall take up the fourth, which contains "an examination of the products of secretion, whether solid, liquid, or gaseous, furnished by the organic membranes," and which are considered under three heads: first, those of the mucous membranes; second, those of the serous membranes; and third, the cutaneous secretions.

The natural secretion of the mucous membrane—mucus—is described both as a healthy and a diseased secretion, the difference between it in the two states being, however, as the authors state, not very distinctly marked. Chemically considered, in its healthy state it consists chiefly of water, holding in solution *mucine*—to which it owes its viscidity and special characteristics, and which is rendered soluble by the presence of free soda—salts of soda, traces of phosphate of lime and silica, and extractive matters. Though it is very commonly stated that albumen, or rather traces of it, are found in healthy mucus, the authors express their opinion, based on experiments, that this elementary principle is only met with in diseased mucus. The special characters of this secretion, as obtained from the several mucous membranes of the body, are described as follows:—

"*a.* Nasal mucus is constituted, in health, by an almost transparent gelatinous mass, containing epithelial cells and mucus corpuscles. It is insoluble in water, but, after a time, loses a small quantity of mucine, the water containing which, becomes turbid on the addition of acetic acid. This mucus, when dried at a gentle heat, regains its properties upon the addition of water. The effect of reagents is identical with that already alluded to, when treating of mucus in general. We may state here, however, that caustic

> alkalies render it thick and rugous, and, at last, produce complete solution.
>
> "*b.* The broncho-pulmonary mucus resembles, in every respect, that derived from the nostrils.
>
> "*c.* The intestinal mucus is a yellowish gelatiniform substance, containing epithelial cells and numerous mucous corpuscles. When thrown into water it sinks, and a small proportion of the mucine is dissolved.
>
> "*d.* The mucus derived from the gall bladder presents nothing special.
>
> "*e.* The same may be said of the vesical mucus."

The effects of disease on the chemical characters of mucus are, that it becomes markedly alkaline, and contains albumen and fatty matters, especially cholesterine. Simon states that pyin—a principle which, however, has not been isolated—is also found in it; but this MM. Becquerel and Rodier deny. Purulent mucus, as it has been, perhaps, with a degree of over-refinement termed, being, in fact, nothing more than pus mixed in variable proportions, according to circumstances, with diseased mucus, is found to constitute the secretion from a mucous membrane deprived of its epithelium, or when it undergoes the ulcerative process. Chemical analysis shows it to contain less mucine, more albumen, and more fatty matter, and also pyin.

The *false membranes*, secreted by the several mucous surfaces, as the result of diseased action, are succinctly yet clearly and sufficiently considered in the following extract:—

> "Each mucous surface may be the seat of false membranes. They occur in the following order, in point of frequency: *a.* In the nostrils; *b.* In the mouth, pharynx, stomach, and intestines; *c.* In the larynx, trachea, and bronchi; *d.* In the bladder and neck of the uterus.
>
> "These false membranes, when fully formed, are composed of a greyish or yellowish substance resembling coagulated white of egg, spread out in thin layers. Their extent and thickness vary considerably. Those which are formed at the close of the disease are thinner and less consistent, they frequently present irregularities, and do not completely cover the subjacent mucous surface. The false membranes, when once deposited on the surface of the epithelium (for it is very certain that this latter is not destroyed), are destined to be eliminated in those cases where the disease terminates favourably. This process of elimination runs a particular course, and constitutes a phase of the disease. In order that it may take place, the nature of the mucous secretion must undergo a change,—the membrane furnishing a certain quantity of healthy

mucus, instead of a false covering. It is, in fact, this mucus which, when secreted in sufficient amount, gradually detaches the false membrane, destroys, and finally eliminates it. In the buccal cavity and in the pharynx, false membranes, if not rapidly thrown off, become black and fetid, and have not unfrequently been mistaken for gangrene.

"What is the nature, we may ask, of these false membranes? Are they formed of coagulated albumen or fibrin? Microscope examination is here of no avail. All micrographers agree in stating, that the false membranes formed on mucous surfaces are unorganized. No cells can be detected; in a word, we see nothing but an amorphous mass, without a trace of organization. In a chemical point of view this substance has not been investigated, but we conceive that such investigation would avail nothing, inasmuch as the reactions of coagulated albumen and of fibrin are absolutely identical.

"There is, however, one reason for regarding these false membranes as composed of coagulated albumen: it is this. The false membranes formed on the serous surfaces are evidently composed of fibrin; this admits of no doubt. They are, moreover, susceptible of organization, which to a certain degree, indeed, they all undergo. Why is not this the case with false membranes formed on the mucous surfaces?

"If we admit, however, that these latter are actually composed of fibrin, the following arguments might possibly explain this difficulty of organization:

"1. False mucous membranes are secreted by a tissue, whose organization is very complex, and to the perfection of which, the pseudo-membranous product is unable immediately to attain; while, on the contrary, the structure of a serous membrane is very simple, being in fact a species of cellular tissue, the organization of which is almost identical with the primitive structure of fibrin.

"False mucous membranes being in contact either with air, aliment, or urine, etc., etc., there is here a special condition which prevents them from becoming duly organized.

"3. It is not absolutely necessary that every fibrinous production should become organized. Thus, pus is evidently an albuminous fluid, in which the fibrin has undergone a special tranformation, in virtue of which it constitutes the pus globule. But these globules can undergo no further organization; they remain as pus globules, and must be eliminated.

"4. False membranes are formed in the bladder, in that form of *cystitis* which is produced by cantharides. Here, along with these false membranes, there is found, in the urine, a certain quantity of albumen in solution. The presence of this substance has given rise to two opinions. If we admit the existence of cystitis produced by cantharides, it is probable that that secreted by the vesical mucous membrane is a fibrinous serosity, which immediately separates into two parts, viz.. the albuminous serosity, which remains in solution, and the fibrin, which coagulates and forms false membranes, absolutely identical with those of mucous membranes, in general. If, on the contrary, we admit, with Bouillaud, the existence of an albuminuria produced by cantharides, and this we conceive to be far more probable, the explanation is simple enough. Such are the grounds upon which we may assert the fibrinous nature of these false membranes.

"We shall now take up the reverse side, and enumerate the reasons for supposing that these false membranes are formed of coagulated albumen.

"1. Their want of organization;

"2. Their being analogous, in appearance and properties, to coagulated albumen;

"3. The absence of albuminous serosity on the surface of all the mucous membranes, except that of the bladder; so that it has been reasonably asked, whether the albumen found in cases of cystitis produced by cantharides, did not proceed from the kidneys.

"In presence of such arguments, we hesitate to pronounce a decided opinion, and can merely say: That the false membranes formed on the mucous surfaces are the result of a specific inflammation, which, more especially at its commencement, secretes an amorphous fibrin, in such a molecular condition as to be unable either to undergo ulterior organization, or even to be transformed into pus. The pus and muco-pus with which they are found mingled, are not the result of a transformation of these membranes, but the secreted product of the specific inflammation of the mucous surface in its later stages, which thus serves to eliminate the morbid secretion first thrown out.

"The view here adopted respecting false mucous membranes obliges us to quote the opinion of Vogel on this subject. In his treatise on *Pathological Anatomy* (page 519) he says: 'In certain 'rare cases of very acute inflammation, coupled with, in all proba-'bility, an excess of fibrin in the blood, the exuded plasma 'coagulates on the surface of the mucous membrane, and thus forms 'a membranous layer, as in croup, diphtheritis, subacute enteritis, 'and especially in dysentery. These false membranes are gene-'rally eliminated, unless the patient succumb prematurely. I have 'never seen them become organized, nor even transformed into pus 'corpuscles or granular cells; all that I have ever seen were 'amorphous.'

"Vogel, usually so exact, has here expressed an opinion which we conceive to be at variance with facts. It is not by reason of its intensity that the inflammation of a mucous surface produces the secretion of a false membrane, but in virtue of a particular disposition, which we may call *specific*. In a word, it is the specific character of the inflammation which gives rise to the pseudo-membranous secretion. False membranes are often seen to form in connexion with a very moderate degree of inflammation, just as certain acute and intense inflammations may occur without any such formation.

> "There is another peculiarity connected with the false membranes formed on mucous surface, viz., that they are never found to contain microscopic algæ or fungi."

The special secretions of the several mucous membranes of the body are next considered in the following order: first, those of the respiratory apparatus, including the gases and the expectorated matters; second, those of the stomach, including the gastric juice and vomited matters; third, those of the intestines, including the fæces, intestinal concretions, and intestinal gases; fourth, those of the nose; and fifth, those of the uterus and vagina. Under the latter head is noticed the observation of M. Donné, that discharges from the genito-uterine mucous membrane may, when of syphilitic origin, be readily distinguished from all other muco-purulent discharges, from the same surface, by their presenting under the microscope a large number of infusorial animalcules, which, in consequence of resembling in form and structure both the *monades* and *trichodes*, he has named *Trichomanas vaginalis*. This statement the authors deny, with the utmost stretch of French politeness, in the following terms, as translated by Dr. Speer:—"All this may possibly be true, but it is not as yet thoroughly established."

The fluid *products of serous membranes* in health are so small in quantity, that it is quite impossible to attempt their analysis; therefore, MM. Becquerel and Rodier necessarily confine their observations to its diseased conditions. These they describe under two heads: first, dropsical effusions, properly so called; and secondly, the fluids which result from inflammation, termed by Vogel fibrinous dropsy,—a very incorrect application of the term, we consider. The following are the conclusions which the authors state they have arrived at, after having made numerous analyses of dropsical fluid:—

> "1. Whenever fluid accumulates in a serous cavity, or in cellular tissue, so as to constitute dropsy, this same fluid is found to be nothing more than a serosity, analogous to the serum of the blood. The albumen, salts, fatty, and extractive matters, are of a similar nature; their proportion, however, is always less than in the serum of the blood; the same, therefore, may be said of their specific gravity. Sometimes, however, this fluid contains a much larger amount of cholesterine than the serum of the blood.
>
> "2. Whenever dropsy is the result of a mechanical obstacle to the circulation of the blood, whether this obstacle be seated in the central organ of the circulation, or in a large vein, the composition of the effused or infiltrated fluid is richer than in those cases where

the cause of the dropsy lies in some modification of the blood; its specific gravity, therefore, is higher.

"3. Whenever dropsy is the result of some modification of the blood, the quantity of albumen, salts, fatty, and extractive matters, is always much less than in the preceding case; in Bright's disease, for example, the fluid is sometimes only found to contain a very small per-centage of albumen.

"4. In different individuals, affected with the same disease, the composition of the dropsical fluid is never absolutely identical. It varies with the composition of the blood. Of the relationship existing between them, however, we know nothing.

"5. When the fluid is removed from the same patient at different periods (as when tapping is performed at certain intervals), its composition is never found to be the same. In general, the fluid contains less and less albumen, in proportion to the frequency of the operation, and to the length of time which has elapsed since the commencement of the disease.

"6. If dropsical fluid be taken from different parts of the same individual, even at the same moment of time, its composition will be found to differ. Thus, the proportion of albumen, and, consequently, the specific gravity, decrease in the the following order:

"1. The peritoneum; the fluid in this cavity always containing the largest amount of albumen;

"2. The pleura;

"3. The pericardium;

"4. The cellular tissue;

"5. Whenever a small quantity of fluid is found in the ventricles of the brain, the proportion of albumen is at its *minimum*, and, indeed, not unfrequently inappreciable."

Instead of the term fibrinous dropsy, applied by Vogel as we have already said, the authors propose the denomination, sero-fibrinous effusion, to designate the secretion which results from inflamed serous membranes. No matter whether effused into the tissues of an organ or into a serous cavity, its chemical qualities are always the same. When first removed from the body, it resembles, in appearance, the simple albuminous fluid of dropsy, from which, however, it differs considerably in composition. Soon, however, the fibrin coagulates, and the whole assumes a gelatinous appearance, from which, eventually, a solid clot may be obtained, in every respect similar to the fibrin of the blood. This sero-fibrinous fluid contains a much less quantity of fibrine and albumen than the blood; to the serum of which it is analogous in composition, supposing that the latter had lost its globules, but retained its fibrin. Should the following statement of MM. Becquerel and Rodier be proved, on further careful investigation, to be correct, it will afford a diagnostic evidence of much value to the pathologist, namely, "that, as a general rule, whenever fibrin is met with in effused fluids, inflammation either is or has been present in the organ which is the seat of the effusion."

The *cutaneous perspiration* in health and in disease is next considered; but on this head the authors offer no new observations, the contents of the chapter being chiefly derived from the investigations of Favre and Simon, from whose writings copious extracts are made.

Passing over the fifth chapter, which treats of the "changes occurring in the solid products of the organism," we shall, in conclusion, shortly notice the contents of the ninth and last chapter of the volume, which is devoted to a consideration of "organic products of new formations," namely, pus, tubercle, and cancer.

The composition of Pus has occasioned much controversy among physiological chemists, and it is well known that no two original analyses of it, hitherto published, agree. To prevent this discrepancy for the future, and to overcome the difficulties to be met with in this inquiry, MM. Becquerel and Rodier recommend that the following method, which they have employed in a large number of qualitative and nine quantitative analyses, should be, for the future, adopted:—

"The pus about to be analyzed (say three ounces) is first divided into four equal parts. Each of which is thus treated:

"1. The first portion, the weight of which has been accurately ascertained, is dried in a stove at a temperature of from 80° to 90° (centigrade measure), it is then weighed after desiccation, calcined with great care in a platinum crucible, and again weighed.

"The results of this part of the process, when referred to 1000, give:

"The weight of the water;

"The aggregate of the solid constituents;

"The weight of the salts.

"These last are then analyzed in a manner similar to that which we have already described when speaking of the salts of the blood.

"2. The second portion of pus is to be treated and boiled with five times its weight of anhydrous alcohol. It is then filtered, and the residuum left on the filter is washed with æther, dried, and weighed.

"This last portion contains the coagulated albumen and the pus corpuscles. To it must be added the weight of a small quantity of albumen which the alcohol removes during filtration; this must be isolated, and weighed separately.

"3. The third portion is to be carefully dried, weighed, pulverized, and treated with distilled water, in which it is to be boiled. It must be filtered, dried, and again weighed. The difference gives the weight of the extractive matters, of the chloride of sodium, and of the soluble salts.

" The residue is now treated with rectified spirit, in which it is boiled. The compound thus formed is subjected to the same series of operations which have already been described in the section relative to the fatty matters of the blood, and we thus obtain the seroline, the animal soap, and the cholesterine.

" 4. The fourth and last portion is now treated with five times its weight of cold distilled water, and smartly shaken. It is then filtered, and the filtered product coagulated by heat. This coagulated matter is dried and weighed: the weight thus obtained indicating the proportion of albumen.

" This proportion is, however, in general, somewhat below the actual amount, inasmuch as there remains a small quantity of albumen on the filter. The above method of procedure, therefore, should only be employed when the pus ceases to afford serum, either on standing or on being filtered.

" When the serum of pus, however, can be procured, we are much more certain respecting the weight of the albumen. In this case the serum is to be coagulated, then filtered, and the product thus afforded, washed with distilled water, alcohol, and ether, and then dried. In this way pure albumen is obtained.

" By the above series of operations we procure:

" *a.* The albumen and pus globules;

" *b.* The extractive matters and soluble salts;

" *c.* The soluble and insoluble salts;

" *d.* The albumen.

" The weight of each individual constituent may be ascertained thus:

" The soluble salts being subtracted from the sum total of the extractive matters, we obtain the exact weight of these latter.

" We then subtract the weight of the albumen from that of the pus corpuscles.

" In our own analyses we have always referred the weight of the solid matters to the standard of 100."

The article on Tubercle, though short, is rich in chemical, microscopical, and pathological facts, collected from various sources, to which, however, we do not perceive that the authors have themselves added anything new.

That on Cancer is equally unsatisfactory as regards the investigations of the authors, though we can strongly recommend it to our readers as containing a concise summary of the most recent physical, microscopical, and chemical characteristics of this morbid product. As regards its chemical composition, we quote the concluding paragraphs of the volume, to show how little reliance can be placed on what has been hitherto published on this subject:—

> "To sum up then, we shall merely say, that these analyses, having been made by different observers, and upon different principles, can scarcely be of any use, inasmuch as their results are, so to speak, analogous to those afforded by the analysis of many other organic changes. But, moreover, many chemists have asserted, that some of these analyses are similar to those of muscular tissue.
>
> "The whole subject therefore requires renewed investigation; but it would be very desirable that all future chemical researches should be carried out according to one single exact procedure; and that, as in the case of pus, the respective ratio between the water and solid constituents should first be taken into consideration, the entire results afforded by analysis being then referred to 100 parts of solid matters. In this manner alone, and by operating upon a large number of specimens, can we hope to obtain results admitting of comparison."

In our former review of this book we gave all due praise to MM. Becquerel and Rodier, and we have now merely to say, what our extracts must have already proved, that the translation of Dr. Speer is all that could be wished for, easy in style, and elegant in execution.

PART III.

MEDICAL MISCELLANY.

◆

TRANSACTIONS OF THE ASSOCIATION OF THE FELLOWS AND LICENTIATES OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

(*Continued from* vol. xxii. p. 211.)

SESSION 1856–7.

First Meeting, November 5, 1856.

Dr. Neligan communicated an account of a singular case in which a human hair had become accidentally knotted around the second toe of an old lady, so tightly as to produce strangulation of the ungual phalanx. At the time Dr. Neligan saw the case, the strangulation had existed for three days; and the toe was very much swollen, inflamed and painful. With some difficulty he was enabled to divide the hair with a sharp-pointed pair of scissors, when the swelling, and consequently the pain, rapidly subsided. In remarking on the case, which he said he brought before the Association chiefly in consequence of its singularity, he alluded to a paper by Dr. J. Weisse, Director of the Hospital for Children at St. Petersburgh. In it a nearly similar occurrence in young children was described under the name of dactylostrangalis (strangulatio digitorum).

Dr. Henry Kennedy detailed the case of a young man, aged 18, who was admitted into Sir Patrick Dun's Hospital, labouring under scarlatina, attended with intermission of the pulse. As the disease advanced, the intermission increased, and was accompanied by very great irregularity of the heart's action. Both these symptoms subsided *pari passu* with the declension of the disease, and the only cause which Dr. Kennedy could assign for their occurrence was the fact that the patient had, previously to his illness, been an inveterate smoker.

SECOND MEETING, DECEMBER 3, 1856.

DR. AQUILLA SMITH detailed the following case of *Hematuria followed by Suppression of Urine.*

"Henry Kilby, a gardener, aged 45, but apparently many years older, was admitted into Sir Patrick Dun's Hospital on Saturday, September 27, 1856. The reason he assigned for entering was, that some members of his family recently had fever, and he was apprehensive that he was about to be attacked with the same disease.

"His pulse was 80, soft; tongue coated in the centre with a light brown fur; appetite bad; he felt weak, but did not complain in any other respect, and was ordered two grains each of gray powder and compound ipecacuanha powder three times a day.

"When visited on the following day, Sunday, the 28th, he stated that he had forgotten to mention that he had passed dark red urine the day before he came into hospital, and that since his admission he had passed water of the same colour, which was in the pan of the night-chair, and to which he directed attention. There was about a pint of fluid, of a dark reddish-brown colour, mixed with fæces, in the vessel. At this time he had no pain or tenderness on pressure in the lumbar region, nor was he worse in any respect than on the previous day. The nurse was directed to leave a vessel with the patient, in order that his urine should be kept till my next visit.

"Monday, 29th. On Sunday evening he had passed about six ounces of dark red urine, and there was a copious deposit of what appeared to be blood at the bottom of the vessel. He had not passed any water in the morning; there was no fulness in the pubic region; and immediately above the pubes percussion gave a clear sound. The patient made no complaint, except that he felt weak and low; pulse 84. In answer to my inquiries, he stated that for some time past he felt a weakness in his loins, but no pain, nor had he observed anything remarkable in his urine until the day before his admission. He was ordered a mixture composed of eight ounces of the infusion of ergot and half an ounce of the tincture, an ounce to be taken three times a day.

"Tuesday, 30th. Has not passed any urine since Sunday evening, about forty hours; no tenderness or fulness in the pubic region; pulse 84, soft; tongue brown and dry, but not attended with thirst; no pain or tenderness in the lumbar region. He made no complaint; his intellect was clear; he answered every question promptly, and said that there was nothing the matter with him but weakness.

"Dr. Law happened to call at the hospital, and I asked him to look at the patient, as I considered him to be in greater danger than might be supposed from the man's own statement. He was ordered to be cupped to six ounces over the kidneys, and to take one ounce of the following diaphoretic mixture every third hour:—Four ounces of the water of acetate of ammonia, one ounce of dilute acetic acid, two drachms of acetate of potash, and three ounces of water. He was also given strong beef-tea during the day, and a warm bath in the afternoon.

"Wednesday, October 1st. Only a small quantity of blood was obtained by cupping, and immediately after the operation the apothecary of the hospital applied eight leeches, which bled freely; the patient had taken a warm bath at his bedside in the afternoon.

"About 10 P.M. hiccup commenced; a mustard plaster was applied to the epigastrium, which checked the hiccup. At 11 o'clock the patient passed about four ounces of urine, of a dark amber colour. The night was spent quietly, but the nurse remarked that he appeared stupid at times, and was inclined to be drowsy. His wife visited him yesterday, and informed the nurse that he had been much addicted to drink. This morning he vomited some greenish-yellow matter shortly after taking his diaphoretic medicine, and when visited at noon he had frequent but not distressing hiccup.

"His pulse was 84, rather stronger than yesterday; tongue not so dry or red; skin soft and moist; no urine passed since last night, and the man said he felt much relieved. No examination of the urine was made, as the nurse had neglected to keep it in a proper vessel.

"A large bran stupe was ordered to be applied over the abdomen, and half an ounce of the following mixture every third hour:—Tincture of orange peel, two drachms; creasote, eight minims; and infusion of mint, eight ounces. He was to omit the diaphoretic mixture, and to have strong beef-tea during the day.

"When visited at 7 P. M. he was unable to speak, but could swallow; pulse 84; the hiccup not relieved; no urine passed since last night; no fulness or dulness on percussion over the pubes. A large blister was ordered to be applied to the epigastrium. At 10 P.M. convulsions set in, and continued without intermission until he died, a short time before midnight.

"*Autopsy* twelve hours after death, by Dr. Henry Kennedy and myself.—The man was well formed, his muscles were of a bright red colour, and no disease whatever was observed, except in the kidneys, which were much enlarged; the capsule peeled off readily; the exposed surface was rough, and when a section was made, there appeared to be great congestion of the whole substance, and disorganization of the cortical portion, in fact, Bright's disease in an advanced stage. There were about two ounces of urine in the bladder; it was drawn off with a catheter, and when treated with nitric acid it became densely opaque.

"This case is remarkable for the small amount of constitutional disturbance during its progress, the late period at which the single act of vomiting occurred, without any previous nausea, and the preservation of the intellectual faculties until a few hours before death. It also presents a good example of the insidious progress made by disease of the kidneys, without giving rise to any symptoms calculated to excite alarm in the mind of the patient: and, in addition to the many similar cases on record, serves to remind the physician how necessary it is to give a guarded prognosis in all cases of partial or complete suppression of urine."

Dr. Moore made the following observations relative to *Gout*, and gave the history of a case of apoplectic metastasis in that disease, as follows:—

"There is a somewhat anomalous form of low rheumatic, or, more properly speaking, neuralgic gout, in which the fibrillæ of the whole muscular system are either simultaneously or consecutively affected. Such cases may be ushered in with coma, flushed face, stertorous breathing, and every symptom of apoplexy, which may pass off in the course of a few hours, or less, and then the muscular tissues become engaged with general constitutional disturbance, indicated by a full, bounding pulse, turbid urine, and high fever. The exacerbations of this form of neuralgic gout are most distressing and prostrating to persons of advanced life, who are usually the sufferers from this form of the disease; to exemplify which, I cannot do more plainly, than by detailing the following case, which I had every opportunity of watching during its protracted course:—

"A gentleman, aged 61, of an active temperament, and who had been engaged in extensive business from early life, at times dyspeptic and bilious, had been in the habit of taking purgative medicine, every fortnight or three weeks, for many years. During the summer of 1854, owing to the prevailing epidemic (cholera), he gave up the use of aperient medicine, and towards autumn, becoming bilious and dejected, he resorted to warm baths, and every expedient save purgative medicine, to improve his secretions, but without effect. Towards the end of October, during the night, he was suddenly seized with all the symptoms of apoplexy—stupor, flushed face, stertorous breathing, &c.—in which state he remained for about three-quarters of an hour, when spontaneous vomiting ensued, and consciousness was restored. In the meantime, mustard cataplasms had been very judiciously applied to the nape of the neck, precordial region, and epigastrium. The temporary coma was thus relieved; but the patient continued feverish and restless, with furred tongue and quick pulse. His medical attendant prescribed a full dose of blue-pill, followed by an active saline draught, and the exhibition of an enema, both of which acted satisfactorily. But the pulse still continued high, the tongue loaded, and the general feverishness remained. I saw him with his ordinary medical attendant, and prescribed small doses of gray powder and James' powder every fourth hour. He continued much in the above state for the following forty-eight hours, when he complained of pain along the nape of the neck and cervical muscles, the paroxysms of which completely prostrated him, and, as they were more aggravated during the night, deprived him wholly of rest. Dover's powder was exhibited at bedtime, in full doses, but with only partial good. The lumbar and hamstring muscles were next engaged, and afterwards the pain in the gastrocnemii became so agonizing that on an accession of the paroxysm the patient's nerve quite forsook him. The pulse kept about 100, the urine was loaded with urates, and the prespirations profuse and of a sour smell. Solution of muriate of morphia was now ordered, in full doses, at bed-time, and with decided benefit. Wine and bark were also exhibited, and when the bowels required to be acted on, he took two grains of gray powder at bed-time, followed the next morning by three drachms of tincture of rhubarb, in soda-water. The distressing exacerbations were prolonged, though gradually diminishing in their intensity, over a period of nearly four weeks, after which the case did well.

"This form of apoplexy, the result of metastasis, is comparatively of frequent occurrence. In this case nature seemed to afford relief by vomiting, which was further carried out by active purgative medicine.

"Dr. Gairdner says the headachs from which those persons suffer in whom the excretions of urates and urea have, from any cause, been suddenly diminished or temporarily arrested, are only a commencement of this affection, which may be likened to the effects of a poison. Now in this case we had a gentleman for many years of his life subject to periodic dosing. This habit was suddenly arrested, and a consequent accumulation of urates ensued, which produced the usual mischievous effects.

"As regards the treatment employed, I feel satisfied that the application of the sinapisms to the nape of the neck was the means of inducing this attack to manifest itself more speedily and so unequivocally, as an atonic form of rheumatic or neuralgic gout. The application of soothing liniments failed to relieve the muscular distress; but I regret that when the gastrocnemii became so painful, that bandaging, as recommended by the late Dr. Graves, had not been resorted to.

"I am also convinced that, in this case, an immediate resort to blood-letting would have been attended with the most injurious results; for towards the latter stages of the attack our patient required not only every nutriment we could suggest, but even stimulants, as wine and brandy, to bear up against the prostration consequent on the severity of the paroxysms.

"In the following somewhat analogous case, I think the good effects of free venesection were peculiarly exemplified:—

"A gentleman, aged 55, of a stout habit of body, *laisser aller* temperament, and who had been in the habit of dosing nightly with strong purgative medicine; omitted his usual dose one evening, his mind having been depressed by the death of a very near relative. Although generally of a quiet disposition, he was observed to be unusually so, and in a few days after, while sitting at dinner, he suddenly fell forward, his head dropping on the table. He was aroused by a friend who happened to be dining with him, and pressed to eat; but, on trying to cut his meat, he missed his plate, and cut on the cloth; immediately after which he fell into a comatose state. He was removed to his room, and remained in that condition till the following morning, when medical aid was procured; he was then freely bled from the arm, and a dose of calomel and compound powder of jalap was administered to him, followed by a turpentine enema; in addition to which, after a short interval, he was made to swallow a black draught. The coma, suffused face, oppressed respiration, &c., were relieved by this active treatment; but he continued slightly incoherent, and had a most excited look for about thirty-six hours afterwards, when he gradually merged into a rapid convalescence.

"Here the good effects of active depletion were well exemplified in a man of comparatively plethoric temperament, who had been rather an immoderate eater and drinker, though not to excess in the latter. Prout on this subject says:—'When too much food is taken, relatively to the constitution of an individual, either the primary or secondary assimilating processes, or both, suffer. In others a large portion of them undergo, more or less perfectly, the primary assimilating processes, and are carried into the mass of the blood; and individuals in whom this takes place suffer more especially from derangement of the secondary assimilating processes, as from hepatic congestion, gout,' &c.

"Since this attack, which occurred a year and a half ago, the patient has been more guarded in his eating and drinking, and has enjoyed good health; but he takes a pill every night, composed of colocynth, aloes, and scammony. I cannot with perfect certainty pronounce this a case of cerebral metastasis from gout, the latter affection not having been localized; at the same time, from the history of his family and hereditary predisposition, coupled with his own mode of life, I feel satisfied his diathesis was decidedly gouty.

"In cases analogous to those I have described, I think we should first look to the position of our patient, and afterwards to the state of the stomach and bowels. In the case of the first patient, nature voluntarily relieved the stomach, and the prima via was well cleared out with a brisk purgative and enema. We are told, by high authorities, that where apoplexy is met with in persons of intemperate habits, suffering from affections of the heart, or rheumatic or gouty diathesis, that we should be careful about depletion by means of the lancet. This caution, I feel satisfied, was attended with the most satisfactory results in each of these cases. In the second case, from the vigorous and rather plethoric temperament of the patient, active depletion was naturally indicated, and was attended with the best effects. At the same time, as a rule, even in such cases, I should be chary in advising free venesection. Dr. Todd, of London, says, 'that the results of experience denote that the majority of cases of apoplexy are best treated by purging, shaving the head, and keeping it cool—perhaps blistering. Bleeding is rarely applicable, except to the young, vigorous, and plethoric.'"

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PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

(*Continued from* vol. xxii. p 217.)

SESSION 1856-7.

First Meeting, December 1, 1856.

Dr. M'Clintock, after some preparatory remarks upon the subject of *intra-uterine diseases* generally, proceeded to exhibit to the Society some interesting examples of fœtal lesions.

First. A cast of a fœtus which was born with a large ventral hernia in the right iliac region. This child had also double hare-lip. It died some weeks after its birth, from irritation of the bowels. The hernial tumour was about the size and shape of the longitudinal half of an hen's egg. It contained the cæcum and portion of the colon, which were incarcerated in the sac of the hernia.

Second. A dry preparation, showing the condition of the spine and sacrum in a case of spina bifida of the lower lumbar region. The posterior boundaries of the spinal canal were entirely wanting for the space of an inch and a half, the edges of the bone being smooth and rounded off.

Third. A large spina bifida of the lumbar region, laid open and carefully dissected, so as to exhibit the fasciculi of the medulla spinalis.

Fourth. The portrait, cast, and skeleton of a monstrous fœtus, born at the full term of gestation, which Dr. M'Clintock asserted was affected with rickets.

This fœtus was born in the hospital on the 14th of last August. The mother was apparently a healthy woman, aged 26, and this her first child. Her health had been as good as we usually find it to be during gestation. The child presented footling, had been alive up to the time of delivery; but the unavoidable delay which took place in the extraction of the arms and head occasioned its death. A glance at the cast, skeleton, or portrait, clearly showed that the head of this fœtus was disproportionately large; nevertheless, the lower extremities presented at the os uteri, in which particular this case furnishes additional evidence (were such required) to subvert the long-established idea, that gravitation was the cause of the head presenting at the time of labour,—the fact being that the fœtus holds this position as being that in which it is most conveniently disposed of (or stowed away) in the uterine cavity. When the head, as in this instance, is abnormally large, so that its bulk equals or exceeds that of the breech, it is very frequently placed towards the fundus uteri, the child presenting with the foot or breech. Thus, of 69 cases of intra-uterine hydrocephalus collected by Dr. Keith, the proportionate frequency of pelvic presentations was 1 in 7; whereas, in ordinary cases, the average frequency of these preternatural presentations is about 1 in 31.

The mother of this child believed that she had reached the full term of utero-gestation; and Dr. M'Clintock saw nothing to contradict this fact, which he considered to be one of some importance, as regards the pathology of the fœtus.

This fœtus was carefully weighed soon after birth, and found to be 6 lbs. 9 ozs. avoirdupois, or 8 lbs. 9 ozs. Troy weight, which is only two or three ounces short of the average weight of the human fœtus at the full term. None of the external appearances of the body were in the slightest degree indicative of prematurity, and the quantity of subcutaneous fat, as could be perceived from the drawing, was very abundant. Its length was only 16 inches, or nearly four inches below the standard length of mature fœtuses. The dry skeleton presents in some respects a very different appearance from what it did when recently stripped of the soft parts. The joints of the extremities, particularly the knees and ankles, were, when recently dissected, unusually large; and the deposition of osseous matter generally was very deficient in quantity, so that a greater degree of shrinking and contraction has taken place than under ordinary circumstances. But making every allowance for this, it is easy to see that something more was required to make such a contrast as exists between it and the skeleton of a healthy fœtus at term.

"If," Dr. M'Clintock remarks, "I am correct in considering this case one of intra-uterine rachitis, it is certainly the first example of the disease that has ever come under my observation. The large head, with prominent os frontis, the remarkable shortening and curving of the limbs, together with the enlargement of the articular extremities of the long bones, and the universal deficiency of ossific matter, are all characters which peculiarly belong to rickets.

"There is little allusion to the subject of intra-uterine rachitis in the works of systematic authors; but I find that M. Depaul has bestowed considerable attention to its investigation. In October, 1850, he is reported to have exhibited to the Académie de Médecine (Paris) a monstrous fœtus of eight months, a rare and interesting example of intra-uterine rickets. The vertebral column and trunk were well formed; the extremities misshapen, the lower particularly short, atrophied, and much curved; the head was voluminous, and on passing the finger across the fontanelle, it felt 'as though hydrocephalic.'

"In the month of January, 1852, this same physician read before the Académie a memoir 'Upon a special Disease of the Osseous System developed during intra-uterine life, and which has generally been described under the name of *Rickets*.' The conclusions he arrives at are those given by Dr. Madge, in his valuable little Treatise on the Diseases of the Fœtus in Utero:—" 1st. The morbid alterations which the skeleton undergoes during intra-uterine life have various origins. 2nd. Those which have been generally described under the name 'rachitisme congénitale,' do not appear to have the same origin as those which belong to the 'rachitisme' developed after birth. 3rd. The form and direction of the curvatures, the internal structure of the bones, &c., all combine to establish between them a well-marked distinction. 4th. Whilst that which is developed during fœtal life is explained by the absence or irregularity of the deposit of calcareous matter, the veritable 'rachitisme,' it seems probable, is owing to the 'ramollissement' of bones already nearly formed, and which have received some temporary interruption to their regular development. 5th. The moral emotions or imaginations of the mother are without influence on these vices of conformation, and nothing short of the superstition and credulity of former epochs could encourage the opposite opinion. 6th. Neither should we be justified in referring these conditions to lesions of the nervous centres, and the consequent muscular contractions. At the same time it appears incontestible that a great number of congenital malformations have this origin. 7th. From the contributions already made to science, we know that the state of the mother's health is quite foreign to their development; in no case has there been established the existence of scrofula or syphilis. 8th. It is worthy of notice that in many instances the malady has manifested itself in 'des grossesses gemellaires,' and this condition has probably something to do with its production. 9th. Those cases which have been exhibited as examples of congenital fractures have been badly interpreted; they may all be considered as the same kind of lesion, and traced to the same cause, which may be said to be the complete absence in a limited space of calcareous matter. In certain cases exuberances are formed, and present swellings which have been mistaken for fractures undergoing the process of reparation. 10th. The morbid alterations in the skeleton, which have been considered in the 'Mémoire,' are much more frequent than is generally believed. I have observed nearly forty cases, and by further observation it would, no doubt, be easy to add to the list. 11th. They are not only grave by the deformities which they cause in the limbs, but, by altering the form of the chest, render the mechanical act of respiration imperfect; and, also, the brain is deprived of its proper protection, and is exposed to injuries incompatible with life."

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.

(*Continued from* vol. xxii. p. 237.)

SESSION 1856–57.

October 8, 1856.

Dr. Richard Corbett, V.P., in the Chair.

Double Aneurism of the Thoracic Aorta.—Dr. Finn exhibited a drawing, cast, and pathological specimen, illustrative of the above case, and narrated the following particulars:—

John O'Dill, a cooper, aged about 55, of tall stature and moderately stout conformation, was admitted into the North Infirmary on the 9th of April, 1855, labouring under bronchitis and dyspnœa. The latter had been so urgent for some weeks previous to his admission as to preclude his sleeping in the horizontal position. His habits had been generally temperate; and he stated that he had habitually enjoyed excellent health, with the exception of occasional twitches of muscular rheumatism, and of two attacks of severe bronchitis, within the last few years; for which he had been under the care of Professor Bullen, of this city, who on the occasion of his attendance on him suspected the existence of cardiac disease, or aneurism, having heard, on applying the stethoscope, a loud bellows-murmur in the region of the heart. Pulse 92, equal in both wrists; tongue clean; appetite moderate. Inspection revealed a large spherical tumour occupying the right side of the chest anteriorly, and extending, in the vertical direction, from a short distance below the clavicle to the nipple; in the lateral from the ancillary border of the pectoral muscle to the left of the mesial line, the latter diameter, which was the larger, measuring nearly eight inches. There was no turgescence of the subcutaneous veins of the chest, nor any abnormal development of those of the neck suggestive of a centripetal pressure. The tumour communicated a strong impulse to the hand, and auscultation detected a double sound; but neither sound was replaced by a murmur. The sounds of the heart were normal; bronchial rales were heard throughout the chest, more especially in the posterior and dependent parts of the lungs.

In a month after admission to hospital the pulmonary symptoms, with the dyspnœa referred to, subsided, and he was thereby enabled to resume the horizontal position in bed. On the occasion of dressing or undressing he suffered sometimes from twitches of pain referred to the right arm and shoulders, and to the space between the scapulæ; but he scarcely ever complained of a sense of uneasiness in the tumour itself. A visible improvement in his health soon followed the use of a more generous diet (now prescribed), combined with a moderate quantity of wine and porter; and the dietetic measures just referred to appeared to exert an immediate influence in solidifying the contents of the sac, thereby diminishing, if not removing, the danger (previously imminent) of a breach of surface. He remained in hospital for the period of a year from the date of his admission, and during the latter nine months of that period enjoyed a complete immunity from illness of any kind. Finding his health much better than for some years previous, he laboured under the delusion that the tumour had diminished considerably in size and that all danger in respect of it had passed.

Soon after leaving, he became an inmate of the South Infirmary, under the care of Professor Harvey, and, after a sojourn of three months in that institution, he was readmitted into the North Infirmary on the 11th of July. About the middle of August he complained of bronchitis in a milder form than previously, and, for the first time, of slight pain referred to the left or distal side of the aneurismal tumour. These symptoms yielded in the space of a few days to the usual treatment; but on this occasion the respiration was found to be more stridulous than previously, and, on applying the stethoscope to the seat of pain above indicated, a feeble bellows murmur was heard in the horizontal, which was rarely audible in the vertical or semi-vertical, position. Nothing worthy of remark presented itself from the 20th of August to the 22nd of September, when he suddenly expired.

Autopsy.—The middle third of the sternum had been almost entirely removed by absorption; the corresponding ribs at the right side had also undergone absorption, varying in extent, the central one having suffered more than the others; one of the ribs at the left side exhibited slight traces of erosion. The pericardium contained a clot of about six ounces, which escaped from a very small opening, situated about an inch above the aortic valves. The heart, which presented a pale-yellow colour, was of the normal size and weight; a considerable quantity of superficial fatty deposit was observed at its base; a portion of the muscular tissues, however, examined under the microscope by Dr. Purcell O'Leary, of this city, did not exhibit any indication of fatty metamorphosis. There was no disease of the valves. The aneurism occupied the right side of the ascending portion of the aorta, having commenced a little more than an inch above the valves; the sac was densely filled with solid, fibrinous coagula, deposited in a stratified form. The arch did not participate in the aneurismal diathesis; but at the commencement of the descending aorta was observed a second, but much smaller, aneurism, evidently of recent formation, and springing from the left aspect of the vessel. To the latter aneurism may be referred the bellows murmur heard for the first time in the month of August last. The absorption of osseous and other structures, on a large scale, involved no pain in this instance[a], nor was the absence of pain found to be incompatible with the existence of aneurism of the "false" kind.

The statement of Dr. Bullen, above cited, referring, as it does, the inception of this aneurism to a period of at least *four* years previous to its fatal termination, would imply that absence of pain is quite compatible with absorption, when slowly progressing; for the decidedly centrifugal character of this aneurism renders it probable, in the highest degree, that erosion commenced at the earliest period of its history.

The "bellows murmur," heard by Dr. Bullen on the occasion of a former attendance, had no existence at a later period of the case. The question suggests itself—What was the source of that murmur? The autopsy excludes the heart from all participation in its production; reasoning by "exclusion" would connect it with some condition (probably the fusiform) of the vessel which preceded the spherical form subsequently assumed. Dr. Lyons maintains that the chances of a double sound in this form of aneurism are directly as the sphericity of the sac[b]. The experience of this case would suggest, that the chances of a murmur replacing either sound bear an inverse ratio to the same condition of the sac.

The normal condition of the muscular and valvular structures may have exercised some influence in determining the emergence of the sac from the right lateral aspect of the vessel, the blood-wave impinging with its maximum force against this point of the canal, which, probably, presented in no higher degree than the portions immediately adjoining, the conditions requisite for the production of aneurism. This result is not inconsistent with the observations of Dr. Stokes on the relations between the violent pulsations of an aneurism and the flabby condition of the heart, as exemplified in a case cited by him[c]; which observations he illustrated by a reference to the laws of hydrostatics, applicable to the case in question.

OCTOBER 22, 1856.

DR. FINN, PRESIDENT, in the Chair.

DR. HARVEY exhibited a laceration in the aorta of a female in comfortable circumstances, aged about 70, who up to the day of her death had enjoyed almost uninterrupted good health. He gave the following particulars of the case:—

"Whilst walking in the street, her foot slipped off the footway, by which she fell, and suffered considerable contusion in the face, head, and arms. In the course of the afternoon she felt 'shaken,' and complained of soreness in the muscles of the abdomen and thorax; but there was no evidence of injury otherwise; no fracture of ribs; and a careful stethoscopic examination detected nothing wrong in either heart or lungs. There was little or no febrile disturbance.

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[a] Vide Dr. Stokes, "Diseases of the Heart and Aorta," on the subject of Pain, page 639.

[b] "On the Motions and Sounds of Aneurism," Dublin Quarterly Journal of Medical Science, vol. ix., 1850.

[c] Dublin Journal, vol. v., 1834; and Diseases of the Heart and Aorta, p. 579.

"Matters were as above described, when, about seven hours after the accident, she suddenly called to a relative, who was instantly at the bedside, and found her face and forehead covered with a cold perspiration, and life was almost immediately extinguished. My residence being very near, I saw the case in a very few minutes: it presented the appearances ordinarily observed after sudden death from affection of the heart. The countenance was calm and placid, and there had been no stir from the easy position in which she had been lying in bed.

"On examination, the left lung was found partly collapsed, and the pleura appeared about half full of clear serum, which was found to be floating over, and to have separated from a huge coagulum, by which the floor of the cavity was filled. The blood had escaped from a rent of about half an inch in length in the descending aorta, near where it crosses the left bronchus.

"The aorta was the seat of extensive and considerably advanced atheromatous disease; the patches being in many places thick, containing osseous plates of various sizes. One of these, about half an inch long, and resembling the half shell of a pholas in shape, was partially dislocated from its berth in a patch of thickened membrane in the immediate vicinity of the laceration, and may, probably, have been instrumental in producing it.

"The whole of the diseased portion of the vessel was densely studded with the foramina described by Rokitansky[a], many of which were of considerable size. Canals led from these openings through the middle coat, and terminated in the areolar tissue outside the vessel, but neither their mode of termination, nor their exact structure, could be satisfactorily made out, the preparation having lain some months before any microscopic examination was instituted. Dr. O'Leary, who then kindly submitted them to examination, was unable to pronounce upon the structure of the canals, owing to the alterations which had taken place. To the naked eye they presented an appearance not unlike that of small arteries."

NOVEMBER 26, 1856.

DR. FINN, PRESIDENT, in the Chair.

Two Cases of Poisoning by Tincture of Aconite. By PROFESSOR O'CONNOR.—"About 12 o'clock at night I was called on to attend an old lady, aged about 70, who was stated by the messenger to be dying. On arriving, I found her in the following state:—Breathing extremely slow, and slightly stertorous; pulse very feeble, and scarcely counting 40 in the minute; extreme pallor of the countenance; she was speechless from debility, the expression of her countenance showing that the intellect was still clear. The muscles of the face were feebly convulsed, as also the right leg and hand, at short intervals of about every second or third minute. I was not told she had taken aconite, and did not suspect it, and gave her stimulants internally, and applied them externally, in spite of which her pulse and breathing became slower and slower, till both one and the other appeared to cease altogether. Nevertheless, I continued to apply to her nostrils salts of ammonia, and, contrary to my expectations, her breathing began to return slowly and feebly, with other signs of returning animation. At this moment I was called to her daughter, a lady aged about 40, who was said to be taken very ill, in an adjoining room. On entering, I found her violently convulsed in the face and upper extremities; her countenance pallid, with an expression of great misery. Her pulse was sluggish, but not feeble. In a few minutes vomiting came on, and she awoke as if from a profound sleep, and stated that she had taken nearly a wine-glass of a liniment intended for her mother, and that she feared the latter had also taken some of it mixed with whey. Suspecting the liniment to contain tincture of aconite, I still thought it better to inquire at the apothecary's, and at the same time procure a stomach-pump. I learned that the liniment contained in eight ounces one ounce of tincture of aconite. On returning to the patient I found her in the following state :—Breathing slow, like one in profound sleep; pulse full, but not exceeding 40 in a minute. Having roused her from sleep with great difficulty, she vomited abundantly, which I encouraged by copious draughts of water, and tickling the throat with a feather. She then, for the first time, expressed great alarm at finding herself totally blind. The pupils were not much, if anything, dilated, but were insensible to the impression of the strongest light. She stated that she had most horrid dreams, and complained of a dreadful sensation at the pit of her stomach, which still she did not call pain. She begged to be let sleep again, and though we used every effort to keep her awake, by slapping her on the hands and cheeks, keeping the caustic water of ammonia to her nostrils, and endeavouring to make her walk a little about the room: still her head drooped on her chest, heavy sleep came on, which in a few minutes ended in a convulsion such as before described; and this again was succeeded by vomiting and a perfect restoration of consciousness. This state of things was constantly repeated for several hours. When in sleep her pulse fell gradually, being sometimes as low as 20 in a minute—but when roused, either by the attendants or by the action of vomiting, it rose, but never beyond 40 in a minute. At intervals I gave her aromatic spirits of ammonia, strong coffee, infusion of nut-galls, but found more advantage from external stimulants. I did not use the stomach-pump, seeing she had vomited so freely, and dreading the momentary interruption to the respiration which its use might cause. She expressed, when awake, a great desire for cool air, and I threw the windows open, which afforded her much comfort. This state of things continued until 4 o'clock, when she complained of acute, agonizing pain in the back of the neck and about the base of the brain, with violent permanent spasms in both arms, extending to the fingers. From the time of the appearance of this symptom the stupor was not so great, nor the pulse so slow, but her own agony, both mental and bodily, was extreme. At 5 o'clock, seven hours after taking the poison, she was seized with one of her usual fits of vomiting, after which she said she recognised on her palate the taste of the 'dreadful poison' which she had taken, and in a few minutes her sight returned, and every symptom of illness disappeared; nor did she afterwards experience the slightest inconvenience, except a feeling of languor and fatigue. The old lady, whom I visited from time to time during the night, gradually recovered, and was equally free from any unpleasant sequela as her daughter. I omitted to mention a singular delusion, under which the latter laboured during part of the time, namely, that her head was many times its ordinary size, which she thought we ought to perceive.'' Having read the details of the case, Professor O'Connor deduced from them the following conclusions:—1st. That after a given time, seven or eight hours, the effects of the medicine are entirely removed from the system, and that if the patient, by every mode of stimulation, can be kept living during that time, recovery will be certain and complete. 2nd. That there is no inflammatory action in the stomach, notwithstanding the painful sensation felt; otherwise the effects would not pass away so rapidly. 3rd. That the convulsions and acute pain in the base of the brain would prove that its influence on the cerebro-spinal system is direct rather than through obstructed circulation. This opinion is in opposition to Professor Fleming's view, and might reasonably excite some distrust of its accuracy. 4th. That, although in cases of extreme debility, as that of the elder patient, the recumbent position is indispensable, it is not the most favourable for preventing somnolency, and should not be adopted whilst the action of the heart retains any energy.

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[a] Pathological Anatomy, vol. iv. p. 264.

December 12, 1856.

Dr. Finn, President, in the Chair.

Effect of Oil of Fern in a Case of Tapeworm. By Dr. R. Corbett, V.P.—" J. M., aged 9, one of three children of a family, has been delicate for the last three years. Her parents had been both of weak constitution. The father died, about two years since, after a long illness, of pulmonary abscess, and her mother is of very spare habit, constantly complaining of dyspeptic symptoms, accompanied by severe headach, capricious appetite, &c. She says that in early life she was subject to worms (*Lumbrici*), which she both vomited and passed by stool, and was so delicate that it was with much care she was reared to maturity; and that about two months ago she passed a large lumbricus. The little patient in question had been, now and again, treated for worms by a former medical attendant of the family, and the chief remedies used were calomel, followed by castor-oil and oil of turpentine, with enemata of the latter; and under this treatment she once voided a flat worm, about six inches in length. When I was first called upon to see her, in the latter end of October last, she was labouring under slight fever, accompanied by nausea and vomiting, with an irritable state of bowels and colicky pains. These symptoms yielded, after two or three days, to ordinary treatment. It was on this occasion that I was made acquainted with the particulars above detailed, and at the same time informed that small portions of a flat worm had now and again appeared in the dejections. I, therefore, requested that in future the evacuations should be closely watched, and when any such portions as those described passed, that they should be carefully kept for my inspection. Very shortly after, I was sent for to visit the child, when the mother produced some portions similar to those described before by her. The child exhibited derangement of stomach and bowels, which I sought to subdue, and did so. In a few days after (14th November) I directed 12 minims of the oil of male fern, in 2 ozs. of almond emulsion, half to be taken at bedtime, and the remainder early the following morning; and in case there should be no action of the bowels within two hours after the second dose, I directed a powder, consisting of 4 grains of scammony and 2 of aromatic powder, to be administered. On the following day, at my visit, about one o'clock, there was presented to me, in a large basin of tepid water, a flat worm, upwards of four feet in length, which had passed off about twenty minutes before I entered the room. The dejection was large and bilious, and the child felt weak after passing it. She was well supported by chicken-broth, &c. After a week, I repeated the remedy; but there was no appearance of worm. The patient's appetite, strength, and spirits all improved, and towards the end of November the child seemed to have greatly gained flesh. In some short time after this, she complained of colicky pains and pruritus ani, which her mother stated invariably preceded the passing of 'flat pieces of worm.' I directed the decoction of pomegranate with lime-water, in small doses, three times a day, and the child rapidly gained strength; but has not since given any evidence of the existence of the parasite. Those which were passed in this case I committed to Dr. O'Leary for microscopic inspection, and he has pronounced it be the *Tænia solium.*

"I had some few years ago a lady under my care, who was of very delicate fibre, and subject to constant bowel irritation, with capricious appetite, sleeplessness, &c. The dejections in this case repeatedly exhibited shreds, which to all appearance were portions of decomposed worms, and, suspecting tænia, I, with the concurrence of a medical friend of the patient, recommended a trial of castor-oil with oil of turpentine, after a dose of calomel and Dover's powder. The medicines were given, and the result was the passing of a considerable portion of tapeworm; but without, for some weeks subsequently, diminishing the quantity of the *shreddy* substance, although passed away with less irritation. Under the use of tonics, especially iron, she at length improved and gained strength, so as to enable her to exercise freely. I had for a long time lost sight of her, when I one day received the following letter from an eminent physician in Scotland:—

"'A lady, who consulted you in Cork, came to me for advice the other day, and as her case is a peculiar one to all appearance, I have proposed that I should communicate with you on the subject. She seems to me at present to labour very clearly under a variety of intestinal disease *which is nowhere distinctly described in books;* but of which I have seen a good many cases, for six or eight years past, chiefly among females in the comfortable ranks of society. For want of a better name, we sometimes call it 'fibrinous diarrhœa,' to avoid committing ourselves prematurely to a pathological doctrine as to its nature. But it is, in all probability, a chronic inflammation of the mucous epithelium of the small intestines, analogous to eczema of the skin. It is characterized by irregularity of the bowels, which, on the whole, however, tend to diarrhœa, and (pathognomonically) by the discharge—sometimes alone, more generally along with the fæces—of *fibrinous matter, in the shape of jelly-like mucus, ribbon-like shreds, or stringy matter, resembling bleached tow.* It is attended with considerable constitutional derangement in general, very often with palpitation and other affections of the heart, very generally with capriciousness of appetite and craving for food, emaciation of course, and a frightful pulse. I have known the fibrinous, ribbon-like matter mistaken for tapeworm.' After allusion to the effect of the castor-oil and turpentine, and doubting the portion passed having been tænia, he says:—'Of course there is no impossibility in the combination of both diseases.' He then asks for my report of the case, and I assured him of the fact of a considerable portion of tapeworm having been passed. I have not since heard anything of this lady; but I thought the case worth mentioning in connexion with that which I have now succinctly detailed.

"I feel assured that there are few professional men who have not in the course of their practice met cases of tapeworm, and successfully treated them; still, I feel justified in bringing these cases forward, if it were only to encourage a further trial of the oil of fern."

Professor Hebra's *Clinique for Diseases of the Skin at Vienna.* (Taken from the Official Report of Dr. B. Schelle during his stay in Vienna through the winter half-year 1855–56.)

In the Clinique for Diseases of the Skin, Professor Hebra puts it forward, in the first place, that these affections are not to be looked upon as peculiar, but as identical with those of other organs, and that only the complex of symptoms of the several morbid processes is different. Resting on this principle, he subjected the extensive nomenclature of cutaneous diseases to an accurate examination, and demonstrated by observation and investigation, for which the Section for Diseases of the Skin at Vienna during fifteen years afforded him sufficient material, that a number of the names given to these affections were already comprehended in others, and, consequently, were superfluous. In this manner he greatly facilitates the acquisition of a knowledge of cutaneous affections, at the same time that, in his well-known familiar style, he communicates to a crowded auditory his excellent observations on the therapeutics of his subject.

Hebra's principle of classification is more natural than artificial. He begins first with *Hyperemias* (Erythema), and points out that constant pressure on certain parts of the body and traumatic invasions are the circumstances which chiefly give rise to hyperemia and its consequent coloration (Pigmentirung). Among the traumatic forms (Eingriffe) he especially enumerates the remedies known in medicine under the name of epispastics (blisters, stimulating ointments, cupping-glasses, &c.), and to treat a patient with these means, uncalled-for by disease, he terms, to maltreat him *lege artis.* To this class follows:—

2. *Anemia* of the skin, which is not put forward as a proper dermatonosis, but is mentioned only so far as it is the cause of a temporary disappearance of forms of cutaneous disease. Thus, scabies, psoriasis, and other varieties, completely disappear in the course of severe diseases, but appear again during convalescence, an observation, which, according to Hebra, also explains the apparent effect of the purgative method.

3. The *anomalies of secretion*, and especially diminished and increased secretion of the perspiration, and of the sebaceous glands. To these Hebra refers all forms hitherto comprised under the term pityriasis (except the pityriasis versicolor), since the increased exfoliation (abschuppung) is merely the consequence of the excessive secretion of the sebaceous glands; just as comedones and acne are nothing else than a flesh-worm (comedo) in an inflamed follicle.

4. The *exudations* comprise by far the greatest number of all morbid affections of the skin. Under them Hebra treats of:—A. The acute forms, that is, the acute exanthemas; erythema, so far as exudation is combined with the hyperemia (to this, also, belong burning and frost-bite), urticaria, erysipelas, dermatitis, furuncle, and anthrax: further, in order to avoid, as far as possible, any confusion, the acute forms distinguished by vesicles are arranged in groups.

B. The *chronic forms* are:—*Psoriasis*, which Hebra treats of with much detail. The first thing observed in it is the occurrence of compressed white scales at the excretory duct of a hair-follicle (Haarbalges). The scales excite itching, and on scratching, a red base remains, which easily bleeds. New efflorescences form near the first, and all enlarge in their periphery to the size of a coin; indeed, they often form great patches. In the several patches the scales become in the centre gradually fewer, the part becomes red, and subsequently regains its normal colour; thence arises the circular form, and by greater enlargement of the patches towards the periphery, where several then run into one another, the well-known serpentine forms are produced. From this it is evident how little value the subdivision of psoriasis according to its form has, as psoriasis punctata, nummularis, diffusa, orbicularis, gyrata, &c.; or the distinction even of another form as a separate disease, Willan, for example, applying the term "lepra" to the circular variety. The hairy scalp, the face, the elbow, the knee, are the parts of the body on which psoriasis is most frequently localized. Unlike eczema, we find it oftener on the extensor than on the flexor surface. It occurs on the palm of the hand and sole of the foot only when it is caused by syphilis [?] In reference to its etiology, Hebra remarks that well-fed people are particularly disposed to psoriasis, and that in general the health is in no respect injured by this affection. Of the truth of this statement I have repeatedly convinced myself in the Clinique. The internal treatment of psoriasis is much more uncertain than the external; even the long-continued use of the strongest arsenical preparations produces no striking effect. Among the external remedies I saw Dutch soap employed with success; it is to be applied twice daily. The soap should first of all be allowed to dry on the skin, and then be washed off. After a course of eight days, or if excoriations occur, its use should be discontinued. Tar and oil of pitch (oleum cadinum) are also employed. Hebra has for some time used a combination of Dutch soap and tar in his so-called tinctura antipsorica, consisting of caustic ley, specific gravity 1·330, one and a half drachm; spermaceti, three drachms; oil of pitch, one ounce; and rectified spirits of wine, two ounces.

It is difficult to diagnose *prurigo* from the appearance of an isolated part, but the diagnosis from its entire aspect is easy. It presents great similarity to eczema and scabies; furthermore, pruriginous patients are very frequently eczematous. In an aggravated degree of prurigo we observe darker coloration, a rougher state of the epidermis, hypertrophy of the papillary bodies, black little crusts formed of dried blood, and, as it frequently occurs on the leg, there may also be inflammation of the inguinal glands. Its extension takes place in the inverse anatomical direction, that is, from below upwards; the leg is most, and the face least, likely to be attacked by it; the extensor surfaces are more disposed to it than the flexor. The obstinacy of the affection indicates its dependence on a general cause, and yet internal remedies are still less efficacious than

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topical. These local applications are those recommended in psoriasis; patients are often apparently quite cured by such treatment, but in a few weeks, however, the old complaint mostly returns.

Hebra gives a great extension to the term *eczema.* The multiplicity of these morbid forms proceeds from nothing else than that the exudation may be deposited in different layers of the skin, in various quantities, at different times, and under different metamorphoses. The disease is one and the same. The proof he adduces is the artificial production of eczema. According to him, there is no other disease of the skin with which we can experiment so much and so easily. Thus we can at any moment produce, keep up, or destroy eczema by stimulants. Consequently, eczema includes all so-called tineas of the hairy scalp, except favus, also porrigo, impetigo, several hitherto so-termed forms of herpes, &c., &c. The above terms are, therefore, removed from science. The spontaneous cure is impeded by scratching. In eczema, as in scabies, scratching is the cause that at the end the fundamental form can scarcely be any longer recognised. Hebra hypothetically explains the obstinate eczematous varieties by stating that the epidermis is not developed in sufficient quantity, because the fundamental elements of horny tissue are not present in the blood to a sufficient amount; the water, in which the epidermoid blastema is so rich, cannot be fully employed in the formation of the epidermoid cells. The treatment with laxatives is, if there be a trace of truth in this hypothesis, untenable. Local treatment must in all cases be had recourse to. The crusts are to be removed by means of oil, and pledgets wet with cold water are then to be applied. In addition to this, our object is most quickly gained, according to Hebra's extensive experience and my own observation, by the application of Dutch soap and tar.

The symptoms of *scabies* resolve themselves into two principal groups, namely—*a.* Such as are caused by the acarus; and *b.* Those which the patient produces by scratching. Each of the two groups presents its own indication, and it is only when we take this consideration into account that we can properly estimate the several methods of treatment recommended, and especially the so-called rapid cure. We possess a number of means of destroying the acarus and its burrowings: an elevated temperature, mercurial ointment, sulphate of copper, narcotics, sulphur, acids, and caustic alkalies. Each of these means may very well serve for the rapid cure of the disease, if the patient has not a very tender skin, such as would not bear their application, and if he does not suffer from eczematous affections produced by scratching, which are in general not suited to the rapid mode of cure. But the cases combined with these affections are precisely those which are very common, whereof we can easily convince ourselves by examining the patients carefully, not merely on the hands, but over the entire body. Hence, the frequent occurrence of relapses after the rapid method of cure; the acari are, indeed, in favourable cases destroyed, but the excoriations and eczemas are not cured. These must consequently be treated according to the rules given above. Hebra has made many experiments in endeavouring to discover a composition which should fulfil both requirements, to destroy the acarus as well as heal the eczema. The following proved to be the best: flowers of sulphur and tar, of each six ounces; chalk, four ounces; green soap (sapo domesticus mollis) and hog's lard, of each one pound;—and, green soap, one ounce; tar, two ounces; sulphur, one drachm; rectified alcohol, four ounces. The former Hebra has used successfully for ten years; the latter he has employed for about six months with still greater advantage.

The fourth chapter concludes with *pemphigus*, in the literature of which an immense chaos still prevails. What have hitherto been called pemphigus are very different diseases. The contents of the vesicle is in one case serous; in other cases it is dense; in others purulent, and even ichorous, as in lying-in women and pyemic patients. Vesicles may, therefore, form in consequence of the most different affections. The proper pemphigus, if we can speak at all of it, a large watery vesicle without areola, Hebra saw but twelve times among 36,000 cases of cutaneous disease. With the terms tinea, porrigo, and impetigo, Hebra banishes roseola, echthyma, and rupia from the literature of skin affections. He denies to miliaria the character of a substantive affection of the skin.

5. *Hemorrhages*, to which belong idiopathic and symptomatic purpura.

6. *Hypertrophies*, to which are referred:—*a*. Those of the epidermis, as, callus, clavus, verruca, nævus verrucosa, and ichthyosis; *b*. Those of the pigment, as, ephelis, chloasma, argyria, &c.; and *c*. Those of the chorion, for example, the elephantiasis arabum (pachydermia of Fuchs), and the lepra norwegiana.

7. *Atrophies* never constitute an independent disease. Thus the cutis becomes atrophied after long-continued favus, &c.

8 and 9. Benignant and malignant *new formations*, to which first of all lupus belongs, for Virchow has demonstrated the nature of new formation in lupus. Hebra distinguishes a lupus vulgaris and serpiginosus, the latter when the lupus heals in the centre, while the periphery is progressively affected. According to the degree of hypertrophic growth and degeneration he assumes both in lupus vulgaris and serpiginosus an exfoliative, exulcerative, and hypertrophic lupus. Hebra considers the view of the French, which attributes the origin of lupus to syphilis, to be untenable. In the neighbourhood of Vienna there are many persons affected with lupus, consequently, specimens of the disease are never wanting in the hospital. Internal treatment avails nothing [?] The best plan is to destroy the new formation with a caustic. Hebra has tried all caustics, and the pointed lapis infernalis pushed, in substance, deeply into the new formation every third or fourth day, proved itself with him to be the most suitable, as well as an iodine solution devised by his assistant, Dr. Richter: pure iodine, half an ounce; iodide of potassium, half an ounce; and glycerine, one ounce.

Dutch soap and tar are good remedies in the exfoliative variety, and are useful accessory means in all the forms.

Acne rosacea is a complication of teleangiektasis, follicular inflammation, and new formation of areolar tissue. Hebra has treated this affection in many ways for the sake of improving the appearance, and for this purpose has in the severer forms employed the pointed caustic in the manner recommended under the head of lupus; in slighter forms he uses gentler stimulants, as solutions of alum, acetate of lead, &c. To this class also belongs the nævus vascularis.

10. *Ulcers.*—Hebra has extremely simplified helkology. "We may," he says, "write the entire helkology on a finger's nail." He designates an ulcer as a loss of substance, involving not merely the epidermis, but penetrating still deeper, while there is an attempt to repair the loss by granulation which is not capable of complete skinning over. The treatment is exceedingly simple: pledgets moistened with warm water, slight caustics according to circumstances, and Baynton's strapping with adhesive plaster.

11. Among the *dermatoneuroses* Hebra reckons the so-called tic douloureux, prurigo latens, and cutis anserina (a dermatospasmus).

12. *Epizoa and Epiphytes.*—The former are the acarus of the follicles, the pediculi vestimentorum, pubis, and capitis, fleas and bugs. Favus represents the highest degree of development of epiphytes in the human subject. I saw it successfully treated with oil or alcohol. However, it is apt to return after apparent total destruction, when a fresh cycle of treatment must commence. To the epiphyte class belong also the herpes tonsurans, pityriasis versicolor, and porrigo decalvans, which all owe their origin to epiphytes of lower development.

13. *Syphilides.*—Hebra entirely rejects the method hitherto in use, of applying the designations of non-syphilitic efflorescences to those of syphilitic nature; thus, he never speaks of roseola syphilitica, lichen syphiliticus, rupia syphilitica, psoriasis syphilitica, &c., but only of syphilis cutanea maculosa, squamosa, nodosa, pustulosa, bullosa, ulcerosa, and vegetans (condylomata); consequently, in diagnosis he considers merely the form in general.—*Aerztliches Intelligenz-Blatt.* No. 31. August 1, 1856, p. 376.

On Myelitis, with Phenomena of an Affection of the Chest. By J. L. C. Schroeder van der Kolk.

Among the diseases which especially deserve the consideration of the physician, those occupy a prominent place which, through the doubtful character of their phenomena during the life of the patient, may easily give rise to error and misconception, and the real nature of which is not unfrequently first discovered when the knife of the anatomist has revealed to us their true origin and situation.

I have, therefore, thought that it would not be unprofitable to communicate a case in which, I candidly confess, I wholly mistook the actual disease, and where I was not satisfactorily enlightened as to its true nature until after the patient's death.

A man, of about fifty years of age, had already been, for six or seven years, subject to a singular disease, chiefly consisting in a want of voluntary control of the movements of his body, so that he found it impossible to stand quiet for a moment, or to direct his gait in a regular manner. For this, several remedies had been administered in vain, particularly extract of nux vomica, of which he at last took 10 grains a day without any benefit. Recourse was subsequently had to the use of nitrate of silver, of which 61 grains were given in progressive doses, with the result that motion appeared to be more regular, and standing caused less fatigue. The disease, however, afterwards returned to its former degree.

When he placed himself under my care, in August of the following year, he exhibited a plethoric habit of body, a red face, and rather heavy eyes; his intellectual faculties were limited and dull, without, however, presenting anything resembling insanity. To these were added a difficulty of speech and stammering, which, with his singular movements, gave him all the appearance of an intoxicated person, although I could not discover that he took strong drink to excess. His movements were extremely strange and persistent, so that at one time he seemed to be about to fall forward, at another, backward, then he would swing to the side, and absolutely could not bring his body to rest unless he was supported on all sides in a lying position in bed. Equally irregular were the motions of his arms, which were in a state of constant vibration, and were bent into such singular turns, that, particularly latterly, it was only after several vain efforts that he could bring food or drink to his mouth. Often he did not fail to give the right direction to his hand, so that he found his way to his ear or nose: usually, however, he reached beyond the mouth, particularly if he made the effort in a standing position; but if he rested his hands on a fixed body, he did not find it difficult to keep his arms quiet. His sleep was usually tranquil, without any movement. He was in other respects healthy, and all the evacuations were regular.

Chiefly at the solicitation of the patient, I had recourse to the employment of galvanism, which was continued, very cautiously, for three weeks, without producing any improvement in his condition.

Some weeks later (11th November) he again came under my care, and was now in a perfectly unconscious state; but I was unable to obtain any information as to the duration or cause of this condition.

I found the patient in a highly unfavourable state: his breathing was very difficult and rattling; his face was red and swollen; his eyes were rather turgid and fixed, and the whole countenance presented an extremely unfavourable and indescribable expression; the pulse was hard, quick, and small.

Under these extremely alarming circumstances, without being able to obtain any information from the patient himself as to his history, I supposed that a neglected affection of the chest, which was no longer to be precisely recognised, had supervened upon his other symptoms, and I gave, with reason, a very unfavourable prognosis. Although the rattling sound of the respiration seemed to indicate the approach of death, I directed an experimental venesection to be performed, and in case any possibility should arise of administering medicines, I prescribed calomel and opium.

Nov. 12th. The bleeding produced an excellent effect: shortly after the operation, consciousness returned; some dulness was, however, still present; the respiration was less difficult; the blood exhibited a thick crust; the pulse was full and hard. So far as his difficulty of articulation permitted, the patient gave me to understand that he had much pain in the chest. This appeared to extend over the entire thorax. He lay, however, to my surprise, constantly on the back. I could observe no cough; a good natural motion took place, but the urine passed involuntarily. For these reasons, I caused the bleeding to be repeated to 8 ounces, and the powder to be continued.

Nov. 13th. After the second bleeding, the blood drawn in which also exhibited a strong crust, a great amelioration of the symptoms again ensued: the breathing became easier; the pulse soft; the consciousness perfect. The patient assured me, moreover, that the pain had given way, and that he felt pretty well. No sputa were expectorated, nor was there any trace of cough. His face was, however, pale, collapsed, and hippocratic; the arms were, if he did not remain in a lying position, in a state of irregular movement, and even to a greater degree than formerly: so that he made strange twistings if he endeavoured to seize anything, and was even unable to bring food or drink to his mouth; his tongue was but little furred; he lay constantly on his back.

I anticipated nothing good from this state, and, wishing to adopt the expectant method, prescribed merely some almond emulsion.

Nov. 15th. The expression of the face is more unfavourable; the pulse has again become somewhat harder; the breathing is free; consciousness undisturbed; the arms are constantly in a state of irregular movement; the eyes are, indeed, not so very anxious, but still exhibit some degree of nervousness. On the whole, the patient is worse.

Nov. 16th. His condition is very much worse; the countenance is hippocratic; the pulse is small and rapid; the bowels are regular; the urine, however, runs off involuntarily; the arms continue in motion; during the whole course of the disease I have observed no movement in the inferior extremities; the giving of food is difficult.

Nov. 17th. Everything indicates a speedy termination of the case: the breathing is slow and gasping, as if intermittent; the pulse is scarcely to be felt. I had already, the day before, thought of administering camphor; but the taking medicine was very difficult, and the patient, whom I now felt unwilling to disturb, died in a few hours.

There had been in the course of this illness something obscure, which made me unwilling to push any treatment with energy. The great disturbance of the respiration, the pain in the chest, and the strong inflammatory crust, had suggested to me the idea of an inflammatory affection of the thoracic organs, with which, too, the great alleviation produced by the bleeding pretty well coincided. When, on the return of consciousness, no cough was observed, nor any sputa expectorated, and although the oppression was diminished, the more and more evident traits of an hippocratic expression became developed, while the patient assured me that he had no pain and felt pretty well, I was constrained to assume the existence of a source of his affection which was not evident from the phenomena. Finally, the rapid termination of the disease, without apparent cause, made me very desirous of obtaining a post-mortem examination.

On opening the chest, it was manifest that the heart and lungs were in a sounder condition than they are found in the majority of dead bodies. Nevertheless, a slight effusion of still soft, tolerably transparent, plastic lymph was visible on the right lung. The pulmonary tissue presented signs of congestion; towards the spine, especially on the left side, the costal pleura was redder than natural, and exhibited a network of beautifully injected vessels, which, however, very often occurs in bodies from lying on the back. The great thoracic vessels were healthy; but on an accurate examination it was seen, that from the fourth to the sixth dorsal vertebra there was some enlargement, and that at the left side, in this situation, a little pus, proceeding from caries, adhered to the body of the fifth vertebra. The abdominal viscera were perfectly sound, and nowhere presented any trace of inflammation.

The skull, which was very thick, having been opened, a large quantity of serum flowed out from between the dura mater and arachnoid. The brain was small, was firmer than usual, but free from any sign of inflammation or congestion; the arachnoid was neither thickened nor inflamed; even the exudation of lymph, which is so often met in the most healthy brains as a whitish matter on the hemispheres at the side of the falciform processes, as the so-called glandulæ Pacchioni, was not present: so that on the exterior the brain is seldom found so free from all trace of exudation as it was in this case. The blood-vessels of the brain were not very red, and were exsanguine, and, consequently, when cut through, appeared only as a few red points; the vessels in the corpora striata alone seemed to be enlarged and widened, although bloodless; in the ventricles there was a tolerably large quantity of clear serum, more than is met with in the healthy state. Neither could I discover any morbid affection in the cerebellum, although the experiments of Flourens, Magendie, and others, proving that wounding the cerebellum produces irregular movements, and deprives the animal of the power of directing its course, might have led to the suspicion of lesion in this part. Neither did I observe anything unusual in the pons varolii, the great commissure of the hemispheres, only the pineal gland was very small, and without acervuli.

The medulla oblongata appeared to me thinner than is ordinarily the case; but the decussation in the anterior part was natural. The dura mater in this situation was somewhat thickened.

The spine having been opened, I at last discovered the source of the disease: from the last cervical to the sixth dorsal vertebra there was suppuration of the dura mater. Above and below this part the membrane in question was very firmly connected with the vertebræ, and particularly in the cervical region, as far as the skull, it was very much thickened; between the first and second cervical vertebræ it was a line in thickness. On opening the dura mater, I found, particularly in the thoracic portion, the posterior part of the spinal marrow very much inflamed, covered with many red blood-vessels, and connected by false membranes to the arachnoid and dura mater; the posterior roots of the nerves were distinctly red and inflamed; here and there in the cauda equina was scattered between the nerves coagulable lymph of a white colour, and between the arachnoid and dura mater this was in that situation more yellow, thick, and not unlike white of egg. On the anterior surface the inflammation was, especially in the thoracic portion, less violent, and the roots of the nerves were whiter; but here also the spinal marrow was attached to the dura mater by numerous false membranes, while the arachnoid was thicker than ordinary. In the cauda equina, on the contrary, the inflammation was more intense on the anterior than on the posterior surface, and was distinguished by a greater degree of redness.

If we reflect upon the foregoing case, it is, in the first place, evident that a double disease was present—the one having manifested itself during more than five years as a chronic affection; the other, which had been superadded, running an acute course, and simulating an affection of the chest.

In the dead body we found no morbid changes of importance, except in the brain and spinal cord. The excessive amount of serum, probably the consequence of chronic inflammation, between the dura-mater and arachnoid, as well as in the ventricles of the brain, gave, it is likely, rise to the dulness and depression which the patient exhibited; perhaps, too, the increased firmness of the brain was connected herewith. That the medulla oblongata appeared smaller than usual is, probably, without pathological importance, as the brain also was smaller; yet it is not unlikely that the chronic inflammation of the dura mater, in this situation, may have impaired the function of some nerves, especially of the glosso-pharyngeal, vagus, and hypoglossus, as the difficulty of speech, which was at the last very much aggravated, appeared to indicate an irregular action of the nerves of speech. I regret that it did not at the time occur to me to make a special examination of these nerves.

The principal source of both diseases thus appears to have lain in the spinal marrow, where sufficient proofs, as well of chronic inflammation, on which the increased thickness of the dura mater depended, as of acute inflammation, passing into suppuration, existed; in the neck, that is to say, this membrane was thickened, but not at all red. The explanation, however, of the irregular movements remains obscure. Was there perhaps in the spinal marrow, or rather in the medulla oblongata, some minute organic alteration deranging the conduction of the nervous power? This is not improbable, but it is by no means demonstrable by the knife of the anatomist. In the cerebellum I found no change, although, according to Flourens, this organ is connected with the co-ordination of the movements.

The deviation observed was not to be compared with convulsive, involuntary movements, since only the direction was involuntary, and every effort produced this result. In a lying position, moreover, the whole body was at rest. This at the time suggested to me the idea that, perhaps, the great quantity of false membranes, by which the spinal marrow was connected with the vertebræ, might in the following manner contribute to produce the irregularities alluded to—that is to say, the spinal marrow, no longer hanging freely, would, on the least motion of the body, participate in the movement, and the irritation necessarily created by the traction of these false membranes on the spinal marrow and roots of the nerves, would again produce other involuntary movements, which in their turn would have the same result: so that the body was kept in a state of perpetual motion so soon as a movement had once taken place; and only during perfect rest, as in bed, was it free from motion.

Now, however, I should rather refer the explanation to an irritation of the gray substance of the medulla oblongata, whence, through reflection on other parts of the spinal marrow, such movements might proceed.

The explanation of the second and more acute disease, presents less difficulty. Many writers, and among others Frank, have already remarked, that inflammation of the spinal marrow, on a level with the thoracic vertebræ, simulates peripneumonia. In this case, in my opinion, a double effect was produced: the inflammation of the anterior roots (the intercostal nerves), although much less than that of the posterior part, probably impeded the motion of the intercostal muscles. Since, however, the posterior roots of the same nerves, which supply sensation, were inflamed, sensation must in them have been increased, and given rise to pain along the entire chest, thus causing a deceptive appearance of internal inflammation. But in the cauda equina the anterior portion was more highly inflamed: whence, probably, the incontinence of urine present during the last illness. Whether any paralysis of the inferior extremities had existed, I could not with certainty decide; but I recollected at the autopsy that I had remarked no movement of the lower limbs during the last illness, neither had others observed any.

Usually there is in acute myelitis pain in the back. We remarked no complaint of the patient in this respect. Still, it may be that, in consequence of the difficulty of articulation, I did not always understand him; but he certainly referred me to the chest, not to the back, and finally he raised himself up, on the second day, and gave me his hand, without complaining of any pain. Independently of the physical signs, the distinction between peripneumonia and myelitis dorsalis consists in the absence of cough and expectoration. The diagnosis between the latter disease and pleuritis dorsalis is, however, more difficult, since great oppression is not uncommon, and there is no expectoration. Nevertheless, in the cough which is there present we have still a distinctive sign. In both diseases, further, the patient lies mostly on the back, which, as is well known, is not the case in peripneumonia.—*Nederlandsch Lancet*, 1855, No. 4, p. 211.

On two Cases of Tonic Spasms in the Hands and Feet. By CAR. TOBIESEN, Practising Physician in Farsund.

ON the 12th of July, 1854, I was called to see two little boys at Huseby Farm, a quarter of a mile from Farsund[a], who were stated to be suffering from convulsions. On my arrival I found—

CASE I.—The boy A, eight years old, in bed, crying, with pains in his hands and feet. His hands and fingers were in a state of constant flexion, and the flexors were tense and hard. On any violent attempt to extend them, painful contractions came on in the flexors; but he thought he felt relief from moderate extension; and, therefore, kept his father beside him engaged in this manœuvre. These more violent and painful contractions occurred spontaneously, at shorter or longer intervals, from a few minutes to half an hour, and again passed off in the course of from five to ten minutes, leaving behind them, however, a tonic contraction of the flexors. The feet were adducted, the toes were inflected, and the muscles of the calves of the legs were hard and tense. All these muscles, thus in a state of tonic contraction, were subjected to the same painful contractions as the hands, with, however, some variation, thus:—At one time all the limbs were contracted together; at another a foot and a hand; again, both hands or both feet; again, one foot or one hand alone. The power of motion was in other respects unimpaired, that is to say, there was no paralysis, and the sensibility was normal, unless possibly it was slightly increased. The temperature of the hands and feet was normal. During the painful contractions the respiration was laboured, as was evidenced by long, asthmatic inspirations; the countenance acquired an anxious expression, somewhat indicative of suffering, but otherwise presented nothing striking. The temperature was normal; the pulse regular, not feverish; the colour of the face was natural; there was no injection of the eyes, nor any heat of head, and consciousness was perfect; the voice and deglutition were natural. No abnormity was found on examining the spine; there was no pain on pressure of any vertebra; motion was free in all directions, and was unattended with pain; the tongue was clean; there was no thirst; the appetite was tolerable; the bowels were regular, and there was free evacuation of clear and light-coloured urine.

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[a] The Swedish mile is equal to 6·648, the Danish to 4·684, English statute miles.

Case II.—The boy N., six years old, presented exactly the same tonic contraction in the hands and feet, accompanied by the same intercurrent, more violent contractions; but in this patient the latter were not so painful, nor were they attended with dyspnœa, only with crying and moaning. The other functions were regular, and in everything else this case resembled that first described.

The father stated that the children, who previously had always been healthy, bathed, on the 10th of July, in a pool or pond, formed by the rain collecting in an excavation in dry sand outside the house. The weather was at the time extremely warm, and the children had bathed at noon, in the greatest heat of the day, though it was blowing a little, as is always the case at that farm, which is situated close to the sea-shore. The cramps began on the following day, without the children having complained of feeling ill, and had continued uninterruptedly in the same manner, except during sleep, when the limbs retained, indeed, the same contracted position, but were at rest.

It appears to me that this history is interesting in several respects, both in an etiological and a diagnostic point of view. It is remarkable that both boys should, after bathing, or rather wading, in fresh rain-water, which they certainly had often done with impunity, have been seized with so unusual and violent an attack as that under our consideration. The common people, therefore, thought they were "bewitched." Had the water undergone any chemical change, or taken up foreign poisonous matters? It was rain water which had stood for a day on previously dry sand, so that it did not even occur to me to make any chemical examination of it. Was insolation of the head or spine the cause of the disease? Its character does not, in my opinion, give much colour to this view, neither was the heat so excessively great. It, therefore, only remains to assume that a chill, attended with suppression of the perspiration, was probably the cause of the attack. But, in ninety-nine cases out of a hundred, this cause would have produced catarrh, cough, or diarrhœa. Now, that it should in both have given rise to apparently so compound a type of disease, seems to indicate something more, something unknown, and, moreover, not to be satisfactorily explained by a reference to individuality, which in other instances so often solves a difficulty. That suppression, or rather diminution, of so considerable a secretion as that of the skin, must produce various derangements in the organic equilibrium, is clear enough; but that often something more is required to explain the great variety of affections supposed to arise from this source, seems equally clear: for example, in the so-called rheumatic fever, in rheumatic tetanus, where the patients lie bathed in perspiration, without the least alleviation. *Cessante causâ cessat effectus* does not hold good, at all events here. As the perspiration contains in 100 parts 90·5 of water, and, in addition, merely some simple salts[a], we are also debarred from taking refuge in the retention of matters in the blood. Here is a void for physiology to fill.

It will probably be admitted that the diagnosis in this case was not very easy. The modern physiology of the nervous system has thrown a light over convulsive diseases which has dissipated much that was obscure, but has, at the same time, reduced them from the rank of diseases to that of symptoms of disease. Considered in a physiological point of view, there are no essential spasms. Spasm expresses a morbid state of irritation in a motor-peripheric or central-portion of nerve, the external character of which is a morbid contraction in the corresponding muscles, intermittent or persistent, clonic or tonic, according as the irritation of the nervous part is periodic or constant. This proposition or rule may, indeed, like all rules, offer exceptions or modifications; but still, it is the rule. Among such modifications may be included the cases where the morbid process, which in a given case produces spasm, should, according to our physical ideas, cause paralysis. As examples hereof, derived from the peripheric system, it may, among other things, be mentioned, that the pressure of the pregnant uterus most frequently gives rise to an apparently paralytic weakness of the legs, while at other times the same cause produces violent spasms in the calves of the legs. I have at present under treatment a pregnant woman who suffers from painful spasms in these parts, to which no other cause can be assigned. What the modification of pressure is, which in this instance excites irritation, spasm, and not, as should be expected, a paralytic sensation, it is not easy to see. On the sudden occurrence of serous apoplexy, clonic spasms in many cases arise. In a case of violent congestion of the brain (*coup de sang*) Andral saw a transient paralysis of the arm; Neisser, in a similar case, observed a passing tonic spasm in one arm. Such exceptions to the rule are worth attending to, because they show that spasm or paralysis alone does not constitute a sufficient evidence of the nature of the internal process upon which the affection depends, but that regard must also be had to all other circumstances; and even then there may be difficulty enough in deciding the point.

The rule, however, is, as has been mentioned above, that spasm indicates irritation. Now, experience teaches that peripheric irritation can take place in the contracted muscle's motor nerves only:

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[a] [In the above statement the author makes the proportion of the solid constituents of the cutaneous transpiration about ten times greater than it has usually been found, and omits all notice of the organic matter, the amount of which generally exceeds that of the salts.—TRANSLATOR.]

for example, in consequence of injury, the pressure of tumours, &c.; or be transferred to the motor nerves from irritated sensitive nerves by reflex action through the spinal marrow; or, finally, be communicated by irradiation from already irritated motor to other motor nerves; for example, in many cases of traumatic tetanus, which the negative results of post-mortem examination oblige us thus to explain.

The central irritation proceeds either from the brain or from the spinal marrow; most frequently from inflammation in the serous membranes of these organs, and it then depends chiefly on the situation of this inflammation, softening, or other disease, what nerves shall be attacked, notwithstanding, as is well known, that, especially with respect to the brain, physiology and pathology do not completely harmonize on this last point.

If these considerations, which, however, as I have stated, do not hold good in every instance, but still are in general to be looked upon as the principal points in deciding the nature of spasmodic attacks, be applied to the present cases, and if we, in the first place, inquire whether there is any probability of a peripheric origin, I think our reply must be in the negative. There is no indication of external lesion of any particular sensitive or motor nerve; neither can morbid irritation of any organ, from the affected nerves of sensation of which these spasms, as reflex movements, should be derived, be discovered; neither did the symptom arise in any particular motor nerve or its appendices, but all were simultaneously attacked; and certainly these nerves have no common rendezvous for the reception of common irritation, except in the central organs.

Is there any sign of cerebral disease?

I am not aware of any disease of the brain capable of existing without fever or alteration of the pulse, without heat of head, redness of the face, or injection of the conjunctiva, without delirium, and with perfect consciousness, and of giving rise to such spasms; but I am well aware that a cerebral disease, under other circumstances, especially a meningitis of the basilar portion, might produce them without or with contemporaneous affection of the spinal marrow. Therefore, the spinal marrow alone remains.

The diseases of the spinal marrow which should be capable of giving occasion to such spasms, without paralytic accompaniments, must probably be inflammation of the marrow itself, or, as is most usual, of the arachnoid; in the present instance both in the upper and lower part, and in the first stage, that is, without effusion.

There are certainly few diseases capable of occurring with such variable intensity as spinal meningitis: at one time manifesting symptoms so intense that any tyro in medicine may distinguish it; at another being so obscure, that the most extreme acumen is necessary to recognise it. Still, I think, we must have something to hold by. Glad as I should have been to discover a *point d'appui* for this diagnosis as a rational guide to treatment, I could not find it. No fever, no quickness of pulse, no pain on pressure, and, what is still more important, no pain or difficulty in motion. There was nothing to cling to, except the tonic spasms alone. Whether these were sufficient, I knew not; but it appeared to me that, to build the diagnosis of so important a disease solely upon this symptom, would be rather bold. I was, therefore, obliged to await stronger confirmation in the further development of the disease, which should undoubtedly quickly occur.

The result, however, was, that I obtained no satisfactory explanation of these spasms, but was obliged to base the diagnosis upon a chill, which, again, had dynamically communicated to the spinal marrow an affection *sui generis*, &c.; and I, therefore, felt the indication to be to adopt a diaphoretic treatment, with the use of volatile liniments to the affected muscles, and to combat the spasms with small doses of opium, while I attentively awaited the development of the disease.

13th. Morning. The patients slept tolerably during the night; their state is otherwise unchanged; there is some perspiration; the temperature and pulse are as yesterday.

Evening. In both boys there is a violent and vain desire to pass water; they had voided urine in the morning; the bladder is not distended; their condition is otherwise unchanged; oil of hyoscyamus and warm poultices were applied over the region of the bladder.

14th. The night was almost sleepless; the spasms are unaltered; the patients passed water a couple of times after the application of the remedies; their state is otherwise unchanged; the bowels acted well.

15th. They slept tolerably; the younger boy is so far better, that the painful contortions are less frequent, but the tonic spasms continue; the elder boy, on the contrary, complains more of pains in the hands and feet; their temperature is somewhat elevated; the pulse is a little quick; there is no pain on pressure in the back; motion is free; the respiration is more oppressed; venesection to six ounces.

16th. The spasms are constant in the elder boy; the respiration is free; the temperature and pulse are normal. The younger boy no longer complains of pains or contractions, but the tonic spasms continue, though, perhaps, they are less violent.

During the following days the spasms gradually diminished: first the jerkings, afterwards the tonic contractions; so that, in the course of ten days, both boys could go about, and, with the exception of weakness, were well. They have latterly been quite healthy.

I have but little to add. A so-called symptomatic treatment may, as is seen, sometimes also lead to favourable results. Perhaps the same would have been attained without treatment. But a symptomatic treatment is unsatisfactory to the rational physician: even a favourable result is not satisfactory, but, as a hap-hazard, it only excites the wish that the accurate study of physiology, combined with practical observations at the bed-side, and the instructive discoveries of pathological anatomy, might shed a clear light upon these and many similar circumstances, whereby medicine would gain in certainty and success, and a love for our art be thereby increased.—*Norsk Magazin for Lægevidenskahen*, x. Bind. 2 Hefte. 1856. p. 82.

On the Endermic Employment of Ioduretted Glycerine. By Dr. Ferdinand Szukits, Assistant Physician to the Section for Diseases of Women in the Hospital at Vienna.

Iodine has for many years been endermically employed in the Section for Diseases of Women with more or less favourable results.

The forms in which it has been hitherto endermically employed are:—1. Iodine vapours, according to the method of Goin de St. Alban; a definite quantity of pure iodine is put into a watch-glass, covered with cotton, and so applied that the cotton comes to lie on the skin deprived of its epidermis. The iodine is volatilized by the heat of the body, spreads through the cotton, and is then absorbed by the skin. The watch-glass prevents evaporation outwards. This plan is strongly recommended by Bonnet. 2. Iodine ointment. 3. Ointment of iodide of potassium. 4. Ointment of ioduretted iodide of potassium. These ointments are, according to Bonnet, in point of efficacy, next to the vapour of iodine applied in the method just described. 5. Solution of iodine, viz.—*a*, in alchohol, as tincture of iodine, containing, according to our Pharmacopœia, thirty grains to the ounce—*b*, in water; and—*c*, in oil, according to Frêne, one part to thirty.

With us the most frequently used is the watery solution of iodine, applied as a poultice, after the following formula:—Pure iodine, ten grains; iodide of potassium, one drachm; water, one pound; but, in some cases, we use the ointments and tincture.

But, notwithstanding the repeated surprisingly favourable results obtained, we were unable, even after employing iodine in these forms for months, to demonstrate a trace of iodine in the urine. In accordance with our observations are those of Bonnet of Lyons, who, in his memoir addressed in the year 1852 to the Academy of Medicine of Paris, "On the absorption and general action of Iodine employed in dressings and surgical operations"[a], mentions, that when he applied iodine to the sound skin, he never could discover it in the urine or saliva, while after four or five days' application of it to the skin, deprived of its epidermis by blisters, moxas, or cauteries, he never failed to find it.

In January of last year, Dr. Frêne proposed the endermic employment of the ioduretted oil first recommended by Personne[b] for internal use, and stated that with it he not only obtained very favourable results, but after a few applications was able to discover iodine in the urine. I tried this method in one case, dissolving, according to his proposal, a scruple of iodine in an ounce of oil of sweet almonds. With this solution I painted the abdomen in a case of peritoneal effusion three times a day, covering the painted part with gutta percha paper. But I could not, even after forty-three applications, detect a trace of iodine in the urine. The investigations made in the pathologico-chemical laboratory afforded the same negative result.

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[a] Gazette Médicale, Nov. 21 and 22, 1852.

[b] Journal de Médecine de Bruxelles, Jan. 1855.

As we saw from the statement given above, all solvents hitherto known dissolve but a small quantity of iodine, water taking up, according to Lehmann and Abl, one-seven-hundreth part [this is ten times greater than the usually assigned solubility of iodine in water, and the author does not here allude to the readiness with which this substance is taken up by a watery solution of iodide of potassium]; oil, one-thirtieth; and alcohol, so much as one-tenth of its weight. The question consequently was, to find a solvent which, without affecting the skin, as the alcohol in tincture of iodine does, should be capable of dissolving the largest possible quantity of iodine. Such a solvent was in 1854 found by M. Cap, Apothecary, in the sweet principle of oil discovered by Scheele, glycerine. Cap ascribed to glycerine the part of a simple excipient, "destined to facilitate the administration of a number of medicines, which glycerine is wonderfully capable of dissolving," as he expresses himself, and he proposed it for the solution of, among others, bromine, iodine, oxide of lead, strychnia, veratria, atropia, morphia, &c. The solutions he named glycerols.

To Dr. Richter belongs the merit of having been the first to introduce the solution of iodine in glycerine into practice as ioduretted glycerine. To render the iodine more soluble, he combined it with iodide of potassium, and when united with this it dissolves in any quantity up to the proportion of nearly 3 to 5. But, at this degree of concentration, it constitutes a caustic solution, too strong for ordinary endermic use; I, therefore, tried several degrees of strength, and finally adopted that of one part of iodine to five of glycerine, which solution can be applied, except on the cervical region, and on the female breast, for a long time, without producing any other annoyance than a moderate sensation of burning.

Applied to the region of the neck, or on the female breast, it occasions, after two or three paintings, a strong sensation of burning, and, after four or five, more or less extensive excoriations, symptoms which require the suspension of the remedy and the use of cold applications. On the abdomen and other parts these effects are produced much more slowly.

When the use of the ioduretted glycerine is continued for a longer time, the epidermis peels off the painted part in flakes. I employed the paintings once a day, covering the painted part with gutta percha paper, to prevent the evaporation of the vapours of iodine.

The paintings may be continued for months without producing iodism, and without causing the least disturbance in the patient's health; according to Bonnet's experiments, the absorption of iodine, and its elimination, may amount to 15 grains a day for many weeks without injuring the health.

As I anticipated from the ioduretted glycerine only the action of a very concentrated solution of iodine, I restricted its employment to those cases where the endermic application of the latter substance seemed to offer a prospect of success. The number of cases in which I employed it amounts to 24; of these five are still under treatment. The cases are:—

a. Eight of peritoneal effusions. In old, obstinate, encysted effusions, ioduretted glycerine acted more quickly than the remedies hitherto used; while in recent effusions it was either not borne, or acted with scarcely more rapidity than warm poultices.

b. One case of excessive development of fat in the abdominal integuments of an amenorrhotic workwoman. After the paintings were continued for eight weeks, the layer of fat, which had been three fingers in thickness, had disappeared.

c. Three cases of inflammation of the breast. In two recent post-puerperal cases the ioduretted glycerine produced, even after the first painting, violent pains; and after the third, excoriation and increase of the inflammation, which had previously been slight, on which account the painting was discontinued. The third case was one of painless swelling, as large as a goose-egg, of the right mammary gland, remaining after parturition. This disappeared after a three-weeks' course of painting.

d. Three cases of encysted ovarian tumour. Two of these were tumours from the size of a child's to that of a man's head, consisting of several cysts of various magnitudes; both tumours were considerably diminished after six or eight weeks' painting. The tumour of the size of a child's head, by its situation in the true pelvis, occasioned urinary irritation, pain in the sacrum, and difficulty of defæcation, all which symptoms disappeared during the use of the ioduretted glycerine; the tumour was, at the end of eight weeks' treatment, reduced to the size of a lemon. The third case was that of an unmarried woman, aged 32, who, though she had never given birth to a child, had, during the last year and a half, remarked a constant increase of her abdomen. When she came under treatment on the 24th of January, 1856, the abdomen corresponded in size to that of the ninth month of pregnancy. The ovarian cyst reached in the median line to the pit of the stomach, and laterally into both hypochondria. Its height, measured from the symphysis pubis, amounted, in the median line, to forty centimetres ($15\frac{3}{4}$ inches nearly), and its breadth from one antero-superior spine of the ilium to the other, over the umbilicus, to 55 centimetres (about $21\frac{1}{2}$ inches). Fluctuation was everywhere very distinct; the ovarian tumour consisted:—1. Of a dense mass, of the size of a child's head, situated to the right side over the symphysis pubis. 2. Of an oblong cyst, four inches long, and three broad, lying on the right ilium, its form being plainly defined through the abdominal parietes; and,

3. To judge from the fluctuation, one large cyst filling the rest of the abdomen. The uterus, measured with the sound, was about two inches longer than usual.

After twelve paintings the height of the tumour was, on the 6th February, 35½ centimetres, that is, 4½ centimetres less, and its breadth 47 centimetres, or 8 less than on the patient's admission, On the 6th March the height was 34, and the breadth 47 centimetres. The height had thus again decreased by 1½ centimetres. The ovarian cyst consequently decreased during a six-weeks' course of treatment in height by 6, and in breadth by 8 centimetres.

e. A sub-peritoneal fibroid tumour of the uterus in a servant-woman, aged 27, who had for three years observed a swelling in her abdomen, and was, on the 26th December, 1855, for the first time delivered in the pay-lying-in hospital. Pregnancy, parturition, and the subsequent confinement ran, notwithstanding the large tumour, a normal course. Four weeks after delivery she took ill with slight peritonitis, for which she was, on the 15th of January of the present year, admitted into hospital. In the abdomen we observed a resistent, insensitive, smooth, semiglobular, non-fluctuating tumour, reaching, in the median line, to seven fingers above the navel, and extending laterally, on the right to the os ilii, on the left to within two fingers of the same, and capable of some displacement towards either side. The height, measured from the symphysis pubis, was 28 centimetres; the breadth, on a level with the umbilicus, was 35, and at the top 31½ centimetres. The uterus was three inches and seven lines long, consequently, about one inch and three lines longer than usual. After nine paintings the height was, on the 24th of January, 26 centimetres, and the breadth 33; the tumour had thus become two centimetres smaller in both directions. On the 6th of February, after twenty-one applications, the height was 24, and the breadth 30 centimetres, consequently, two and three centimetres less. Yesterday, on the 6th of March, the tumour was, after fifty applications, 21 centimetres high, and 28½ in breadth, that is, 2½ and 3 centimetres less than on the last measurement. The top of the tumour, yesterday, measured 27½ centimetres; while, on the 15th of January, it had measured 31½, consequently, it was now 4 centimetres less.

The tumour had thus, in the course of seven weeks, diminished in height by 7, and in breadth by 6½ centimetres: that is, on an an average, by nearly two and three-quarters inches in all directions.

Both in the ovarian cyst and in the fibroid tumour the diminution was at first rapid and afterwards more tedious; the fibroid tumour was also more resistant in its mass when it was smaller; it now presents itself as an easily movable, globular, almost cartilaginous tumour.

The ioduretted glycerine consequently produced, both in the ovarian cyst and in the fibroid tumour, a striking diminution of volume. This result is so much the more remarkable and encouraging in the case of the fibroid tumour, as hitherto no instance has been known of the artificial diminution of a fibroid tumour. Retrocession of sub-peritoneal fibroid has been observed only as a consequence of fatty or calcareous degeneration, but art is not competent either to initiate or to keep up or hasten these processes. The utmost therapeutics could hitherto effect in this disease has been, by diminishing the congestion of the pelvic organs, possibly to produce an arrest of the development of the tumours. I therefore believe that in ioduretted glycerine an agent has been found which is destined to occupy a foremost place in the treatment of abdominal tumours.

Ioduretted glycerine has also been employed:—

f. Once in infarction of the uterus; an attempt was made to paint the os uteri with a solution of a scruple, and subsequently of half a scruple to the ounce, but it was not borne.

g. Four times in enlargement of the thyroid gland; and—

h. Three times in scrofulous glandular swellings of the neck, and twice in cases where the tumours were equal in size to a man's fist or a small child's head. The results in these seven cases were not striking. Weeks elapsed before a slight decrease of the tumours was perceptible; certainly the solution of iodine was very weak in proportion to Richter's, but, on the other hand, all the patients complained of its producing very violent pain, and could only, with trouble, be induced to submit to a repetition of the application.

The urine was in all cases accurately examined for iodine; and, in all, the presence of an alkaline iodide was demonstrated; the iodine was absorbed most rapidly in mastitis: even after the second painting I discovered iodine both in the milk and urine. When the application was made to other parts of the body, iodine could not be discovered in the urine until after from five to eight paintings, nor in the saliva until after from ten to fifteen. These investigations were, in many instances, simultaneously carried on in the Pathologico-chemical Laboratory of the General Hospital; and, according to the Minutes, numbered 553, 554, &c., of last year, and 2, 3, &c., of this year, with a confirmatory result.

In order to ascertain how long iodine remains in the system, I, in one case, suspended the paintings, and examined the urine—*a*, in 36 hours; *b*, in 48 hours; and *c*, in 60 hours. After the last application, in all the specimens, iodine was indicated in the urine; but, according to the investigation of Dr. Heller, *a* afforded a more decided reaction than *b* or *c*. The urine of the same patient, examined 72 and 82 hours subsequently to the last painting, exhibited no trace of iodine.

Finally, I take leave to mention that, by Denonvillier's advice, I tried the glycerine in five cases of bed-sore, and with a favourable result.—*Wochenblatt der Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, No. 36. 1 September, 1856. Page 581.

A Case of Myopathic Luxation. From a work to be shortly published on Myopathic Paralysis: *Paralysis ex alienata Musculorum Nutritione.* By Dr. HERMANN FRIEDBERG, of Berlin.

THE following case I brought forward in a communication I had the honour to make to the Surgical Section of the thirty-second meeting of German Naturalists and Physicians at Vienna. Its interpretation belongs as well to internal medicine as to surgery. These are, however, not to be separated, but combined, in treating of its pathology; for, in the true understanding of their problems, both are equally closely connected with physiology; to the latter they must, in part, be subordinate, inasmuch as they learn from it to make its doctrines productive in advancing the knowledge and treatment of diseases.

In the relaxation of the muscles in this case I can see solely and alone the loss of their elasticity. But this must, in my opinion, be attributed extensively to the protracted lesion of nutrition of the muscles, which, in this instance, was caused by a well-marked attack of muscular inflammation. This is not the place to discuss the question of muscular tone. Thus much I may, however, be permitted to remark, that I look upon muscular tone as nothing else than the elasticity of muscles. It depends on the central structures of the nervous system only so far as these exercise an influence on the tissues in general, and consequently, also, on those of the muscular substance. If the central structures of the nervous system are so affected that they disturb the nutrition of the muscular substance, the tone of the muscles will appear to be altered, because in all cases a lesion of nutrition of the muscles of a certain intensity must necessarily injure the elasticity of the latter. But the same effect may also be produced by causes wholly different, without any concurrence of an affection of the central structures of the nervous system. I shall find another opportunity of explaining these physiological views more fully than is admissible in communicating the present case.

Otto H., born on the 4th of December, 1851, fell in March, 1853, with the left hand extended flat on the ground, and so soon as after the lapse of some hours complained of pains in the arm. Two days later a swelling manifested itself in the region of the wrist, which extended towards the shoulder and the left half of the neck. The child moved the arm, which was very sensitive to the touch, only when specially desired to do so; otherwise he allowed it, moderately flexed at the elbow-joint, to hang down, and he kept it at rest, fearing the pain which motion gave him. At the end of three days the swelling was no longer perceptible about the wrist; it disappeared from the shoulder in from five to six weeks; the little patient did not regain the full use of the arm. He could indeed, make use of it, but he evidently spared it; he also complained, from time to time, of flying pains in the upper arm. Subsequently, very transient, but frequently recurrent spasms set in, with a constantly progressive emaciation of the extremity. During this time the unsuccessful medical treatment consisted in the employment of volatile liniments, strengthening baths, moxas on the shoulder, and an issue in the neck.

Two years had elapsed from the date of the accident when the boy was brought to my clinique. The left arm was an inch longer than the right; its integuments felt somewhat cooler, but neither in sensibility, nor in any other respect, did they present a deviation from the normal condition. The upper arm was strikingly emaciated; the shoulder and cervical region were less so; the forearm still less. The hand was as full as that of the right side. The upper arm had lost the sixth part of its circumference; its muscles were uniformly atrophied, the emaciation extended to the *pectoralis major* and *minor*, the anterior and lateral bundles of the upper half of the *trapezius*, and to all the muscles passing from the scapula to the arm. The above-named muscular portions felt in different degrees flabby and relaxed, as was especially the case with the deltoid, which, particularly in the middle, seemed to have quite disappeared; further, the portions adjoining their insertion of the *pectoralis major* and of the *latissimus dorsi* and *supraspinatus*, the groove for which appeared in its outer two-thirds to be almost empty, were in a similar condition. The spinal rim of the scapula did not stand out from the thorax, and was not further removed from the vertebral column than the right; it ran, however, in a more perpendicular direction than the latter, which was caused by the upper part of the bone being drawn outwards by the weight of the dependent arm. The shoulder-blade, as well as the humerus, appeared to be normally developed. The outer edge of the acromion, which was a little prominent, was sharply defined; the articular cavity was empty; the capsule was apparently not thickened. The head of the humerus, which was depressed downwards for an inch in a perpendicular direction, could with the greatest ease be raised up against the articular surface of the glenoid cavity, and fitted to it without interposition; but when left to itself, it fell down again. There was nowhere any muscular contraction.

In the region of the *pectoralis major*, *latissimus dorsi*, and the most anterior and most posterior bundles of the deltoid, were observed isolated, superficial, fibrillar twitchings, which occurred spontaneously, but more evidently when breathed upon, or upon contact with a cold body, and also took place when the boy endeavoured to contract these muscles. In the middle part of the deltoid these twitchings were as little to be observed as in the other muscles passing to the humerus. More circumscribed, but also transient contractions, which imparted a jerking motion to the shoulder-blade, manifested themselves now in the one, and again in the other, fasciculus of the left *trapezius;* these contractions also occurred more strongly when the child attempted to shorten the muscle.

He could accomplish no movement of the upper arm, but endeavoured to compensate for this defect by moving the scapula. When he wished to bend the forearm, he brought it by jerking motions into a state of pronation, and then tried during this condition to accomplish the shortening of the *flexor carpi radialis* and the *supinator longus*, but chiefly of the *pronator teres.* As, however, he but very imperfectly succeeded in this, he seized the left hand with the right, in order to complete the flexion of the forearm. During this, not a trace of contraction was to be observed either in the *biceps* or in the *brachialis internus.* Extension of the forearm was quite impossible to the child; he endeavoured to accomplish it by letting it fall. The muscles situated on the forearm and hand preserved their normal functions. The application of the induction stream to the individual muscles produced only slight spasms in the *pectoralis major* and *minor*, the *latissimus dorsi*, and the anterior and posterior bundles of the *deltoid.* The middle fasciculi of the latter, as well as all the muscles situated on the upper arm, remained unexcited; otherwise the electro-muscular sensibility kept pace with the contractility.

In other respects, the boy was strong and healthy, as were his parents and brothers and sisters. He had early learned to walk, and dentition had been unattended with trouble. A few days after his admission into hospital he was attacked with measles; these ran a very mild course, and exhibited no influence on the left arm.

Family circumstances caused his mother to keep him away from the clinique. When I again saw him, a year later, he had grown very much, had a blooming appearance, and was for his age well developed, both in mind and body. The affection of the left arm had, however, made considerable progress. Its circumference was, on an average, about one-fourth less than that of the right, and it hung down so loosely that it vibrated with the movements of the body. The elasticity of the muscles of the forearm appeared to be diminished. The wrist was consequently relaxed, so that motion in this situation produced a dangling effect; the pressure, too, which he could give with the hand, was weaker than before. The wasting of the muscles of the upper arm appeared more striking than formerly. They presented slender, flabby, flat cords, capable of being pushed backwards and forwards over the bone. The development of this, as well as that of the shoulder-blade, was remarkably arrested. The atrophy of the deltoid was so great, that on palpation, in fact, as de Haën wrote of the paralysis from lead, we felt through the integuments "*ejus loco nihil nisi membranaceum quid.*" The glenoid cavity appeared more flattened than before; the inferior half of the trapezius and the rhomboid muscle were found strikingly wasted, and consequently the part of the thoracic wall covered by them presented an arched form. As the traction antagonistic to the serratus anticus major, the levator anguli scapulæ, and the posterior fasciculi of the upper half of the trapezius, was thus taken away, the spinal edge of the scapula was removed by about three-quarters of an inch further from the spinous processes than on the right side, and its inferior angle was drawn upwards by almost an inch. The portions of the trapezius, and of the splenius capitis adjoining their insertion into the occipital bone, appeared hypertrophied, and formed a distinct projection on the left side of the nape of the neck; the head was, in consequence, slightly inclined backwards, and to the left side. The latissimus dorsi, and the posterior bundles of the deltoid, had quite lost their electrical contractility and sensibility, while these were very slight in the inferior half of the trapezius and in the rhomboid. The inferior angle of the scapula still lay tolerably close to the thorax, in consequence of the ample elasticity of the serratus anticus major. The subscapularis must have been atrophied, for when the scapula was pushed backwards and forwards on the thorax, it was felt that the soft undercushion was wanting, which the right shoulder-blade possessed in the muscle just named. When the child wished to bring the left hand towards the sacrum, he drew the scapula by means of the posterior fasciculi of the upper half of the trapezius, and the levator anguli scapulæ powerfully upwards, and with a slinging motion threw the hand backwards, but then the serratus anticus major immediately came into action, and drew the inferior angle outwards, so that the boy had to repeat the manœuvre, without, however, attaining his object.

We see that in the foregoing case all the symptoms are present which are stated to be characteristic of the so-called progressive muscular atrophy, especially the unequally progressive wasting, the fibrillar twitchings, the paralysis of motion, the diminished electro-muscular contractility. This very circumstance is a proof that the processes which take place in progressive muscular atrophy are not different from those which may occur in consequence of traumatic inflammation of the muscles. Such a condition, in fact, existed in my patient, as the phenomena observed during the first days after the accident proved. When the boy fell with out-stretched hand upon the ground, the muscles of the arm, especially those surrounding the shoulder-joint, experienced a violent dragging, through the impetuous pushing upwards of the head of the humerus. In the region of the deltoid, the supraspinatus, and the upper half of the trapezius, the painful swelling and the sensibility to the touch and to movement were prominently manifested, and indeed soon after the accident; the flaccid hanging down of the arm about this time also indicated the injury these muscles had suffered. The inflammation was not dispersed, but led to degenerative atrophy, which spread from the originally wasted muscles to others in the neighbourhood. How far community of the arterial streams cooperated in this extension, I shall not attempt to determine. A *neuro-paralysis*, a paralysis proceeding from the extra-muscular parts of the nerves, we cannot, in the presence of these phenomena, assume; because the paralyzed muscles are innervated by different trunks, and among these there is none which does not exhibit, under its influence, muscles capable of contraction along with those that are paralyzed. But even in one and the same muscle, some parts are capable of motion, while others are not; and within a year some have lost, while others have retained this function. On the question of the possibility of a *trophoneurosis*, I do not feel myself called upon to enter, for the muscular inflammation sufficiently explains the degenerative atrophy effected by destruction of the primitive fibres, and by fatty metamorphosis, and, consequently, the paralysis; and it will also follow that the development of the scapula and of the humerus will be arrested, when the affected muscles are rendered permanently incapable of contraction in a subject at the age of my patient. The assumption of a so-called neurosis of stability, I may well indeed pass over in silence. If, in the present case, we speak of paralysis, we must call it a *myopathic paralysis*, that is, *a paralysis in which, in consequence of the lesion of nutrition of the muscular substance, on the one hand the primitive muscular fibres lose their power of contraction; on the other, the nervous filaments enveloping them lose their governing power.* It is, however, not my intention, on the present occasion, to discuss further the nature of the paralysis; I much prefer to investigate the luxation of the humerus downwards in a perpendicular direction, which was caused by the lesion of nutrition of the muscles, and may, in this sense, be called a *myopathic luxation.* Such can, of course, be entertained only so far as the maintenance of the articulated parts in their proper situation depends on the due distribution of the elasticity of the muscles moving the joint.

During a permanent lesion of nutrition, the muscle loses its elasticity. If traction is now exercised on it, it lengthens itself, and the more so in proportion as its relaxation is less interrupted by contractions, consequently, this takes place in myopathic paralysis. From whatever cause, too, the lesion of nutrition of the muscle may have arisen, whether from violence acting on it from without (*myopathia traumatica*), or from the propagation of inflammation, for example, of the joint to it (*myopathia propagata*), or from a poisoning of the blood, produced by the contagion of scarlatina, by lead, or any other agent (*myopathia dyscrasica*), or from continued interruption of the innervation or diminution of the stream of arterial blood (*myopathia marastica*); the muscle may always suffer a constant elongation, so soon as the lesion of nutrition is intense and extensive enough to deprive it of its elasticity.

If it lose the latter, the extending equilibrium to the antagonistic muscles is wanting. They, consequently, become shortened, and, like all elastic bodies, the more so, the longer the shortening continues. In this lies the cause of the unilateral deviation of the bones in the direction of the traction exercised by the shortened muscles, and, consequently, the source of the myopathic luxation.

Myopathic luxation occurs in the most different joints, under more or less complicated circumstances. These circumstances are most simple in the shoulder-joint; consequently, it is here that the luxation can be best studied. Even *à priori* we may be prepared to meet myopathic luxation chiefly in the shoulder-joint, because in it, on account of the extensibility of the capsule and its ligaments, it must be exclusively muscles which press the head of the humerus against the glenoid cavity, and fix it there. For this reason, a complete luxation may occur in the shoulder-joint, as the immediate consequence of myopathic paralysis. In other joints the latter is in the first instance capable of producing merely an imperfect luxation, which can be converted into a complete luxation only when other causes come into play.

Now, if some muscles, whose function it is to prevent luxation of the head of the humerus, should lose their elasticity to a sufficient degree, the tension of their antagonists will act on it the more powerfully, and dislocate it in this direction. Among the affected muscles is most frequently found the deltoid, and especially its middle portion; in consequence of which the head of the humerus gives way, following the pectoralis major and latissimus dorsi towards the inner edge of the glenoid cavity; in my patient the head of the humerus did not take this direction, because the pectoralis major and latissimus dorsi, in consequence of the lesion of nutrition they had suffered, had lost the power of contraction.

The luxation inwards above described occurs, for example, not unfrequently after inflammation of the shoulder-joint has run its course, if this had extended to the deltoid. In a protracted case of inflammation of the deltoid, the existence of a chronic inflammation of the joint is often inferred; but the structures constituting the joint may be perfectly sound, while the lesion of nutrition, which has occurred in the deltoid either originally or by propagation, causes the head of the humerus to deviate towards the inner edge of the articular cavity.

The humerus can sink downwards in a perpendicular direction, only when the supraspinatus muscle is torn, or has, in consequence of a lesion of nutrition, lost its elasticity.

It is well known that the maintenance of the head of the humerus in the glenoid cavity has been ascribed to the muscles surrounding the shoulder-joint. In proof of this we might refer to the fact proved by Professor Hyrtl, that "if all the muscles are removed from this joint, the laxity of the capsule permits the head of the humerus to sink lower by almost an inch"[a]. The question, whether this general statement is correct, is of practical importance, for rational treatment demands as accurate a demarcation as possible of the affected region.

The rotation of the head of the humerus outwards is generally stated to be the chief action of the supraspinatus muscle. I could not, however, convince myself that this muscle performs the movement attributed to it. But I must ascribe to it the function of preventing luxation downwards; and this I do so far, that I am of opinion that the other muscles could not accomplish this if it did not.

[a] Handbuch der topogr. Anat., Bd. 2, page 205.

The fasciculi of the deltoid are capable of participating in this action, so long as they possess their normal elasticity, and do *not* contract. But if they do contract, in order to raise the humerus, they forthwith abduct it, press *eo ipso* the head of the humerus towards the inner wall of the capsule, and would luxate it in this direction, if this were not prevented by another muscular action. But this takes place chiefly through the supraspinatus muscle, which can here so much the more freely counteract the deltoid, as a bursa mucosa lies between the two muscles where the deltoid passes over the supraspinatus. If the contraction of the middle portion of the deltoid overcomes the supraspinatus muscle, as, for example, in energetic faradisation, inward dislocation of the head of the humerus takes place.

The long head of the triceps brachii, lying between the teres major and minor, which proceeds from the outer edge of the scapula, and is firmly attached to the lower part of the capsule, must push the head of the humerus towards its anterior wall, and remove it in this direction from the glenoid cavity. The long head of the biceps must press it towards the posterior wall of the capsule. The supraspinatus and teres minor are, by reason of their obliquely ascending course, not adapted to hold the head of the humerus up against the glenoid cavity. Just as little is the subscapularis, combined with the teres major, capable of this, the hold of which on the head of the humerus is, moreover, weakened by the bursa mucosa, which the tilting out of the synovial membrane forms in this situation.

When the arm hangs down on the thorax, the *tuberculum majus* lies exactly in the middle of the anterior aspect, and its upper edge forms, so to speak, the summit of the humerus. To this highest point the supraspinatus comes from above, which, proceeding from the supraspinous fossa, attaches itself to the superior facette of the tuberculum majus. Its tendon occupies the space between the base of the acromion and the superior part of the cartilaginous lip, and is attached to both by means of very firm connective tissue. We need only take these circumstances into consideration to see that the muscle in question, as it comes from behind directly forward over the head of the humerus, cannot rotate the humerus outwards, but that, acting from above, it must serve to keep it in contact with the articular cavity.

If in the dead body we divide the muscles surrounding the shoulder-joint, without injuring the supraspinatus, luxation of the head of the humerus downwards does not take place.

If the humerus sinks downwards, whether in a straight or oblique direction, the supraspinatus must be torn, or, as a result of its lesion of nutrition, be lengthened. I do not, however, believe, that the arm luxated downwards in consequence of paralysis of the supraspinatus muscle, can be gradually removed so far from the articular cavity as it was in my patient, exclusively through its own weight, if the other muscles surrounding the shoulder-joint possess their normal elasticity. In this boy, certainly the supraspinatus muscle might, at most, have been strained through the violent pushing up of the head in the fall. But we should, however, probably not attribute the further depression of the head of the humerus to this muscle alone, but refer a share in it to the other muscles surrounding the shoulder-joint, for they all exhibit a loss of elasticity.

The contractility of the supraspinatus is most effectually restored by the induction-current applied by including the middle-fourths of the supraspinous fossa between the moistened conducting points. But these must be firmly pressed in, as the anterior half of the muscle is covered by the deltoid, and the posterior by the trapezius. In addition, the arm must be supported by a suitably modified Bell's apparatus, so as to prevent the muscles being any longer strained by the weight of the limb. In my patient, the other muscles of the left arm are also subjected to the methodical application of the induction-current; this will, indeed, probably not be of use to such portions of the muscles as are wholly devoid of reaction, but it may restore the normal condition of the others.

If there be a luxation inwards, and consequently a contraction of the pectoralis major and latissimus dorsi, it will be necessary, in addition to the faradisation of the supraspinatus, to expose both the muscles mentioned to the continuous galvanic current, in order to extend them without pain, and, therefore, without reactive contraction, and thus to accomplish the replacement of the head of the humerus. But we must not cherish unreasonable expectations from the effect of the continuous current; for example, it does not overcome adhesions of the connective tissue, nor can it improve the state of muscles which have undergone a process of complete degeneration.—*Oesterreichische Zeitschrift für practische Heilkunde*, **January 2, 1857, p. 1.**

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MAY 1, 1857.

PART I.

ORIGINAL COMMUNICATIONS.

Art. VII.—*Essays on the Natural History of Syphilis.* No. II.

By William Henry Porter, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital, &c., &c.

Having discussed the subject of inoculation as a means of investigating syphilis, and endeavoured to show its inefficiency in sustaining the doctrines that were chiefly supported, and by many supposed to be established, by it; and having assumed that the converse of these doctrines is true, and that the pus secreted by every venereal sore, and in every stage of its progress, is capable of conveying the infection and propagating the disease,—I pass to another curious yet most important part of the inquiry, namely, whether there is any other animal secretion, by which, as well as by pus, the poison may be conveyed. Here, *in limine*, I am prepared to encounter an almost universal expression of dissent, for surgeons have been so accustomed to regard purulent matter as the one and only vehicle, and have so yielded themselves to authorities on this subject without examination, that it requires no small degree of confidence to raise the question, or even to hint at the possibility of their being in error. But the subject is of too much practical importance to admit of adoption or rejection on any authority, for, if there is any hidden or unsuspected path by which this poison may gain admission unawares—any secretion supposed to be harmless, but which, nevertheless, is often the infecting medium—an acquaintance with the fact may be of incalculable value in explaining mysterious appearances, and clearing up doubts and difficulties of a most delicate and distressing nature. It may be as well, however, to commence by a candid acknowledgment, that the advocates of but one vehicle only adhere to the general analogy of nature, when they say there is no other known instance of a plurality of vehicles; and, denying that any such phenomenon has ever been observed, ask why it should obtain in syphilis? Simply, it may be answered, because there is no such disease in the world as syphilis except itself—nothing resembling, nothing bearing the slightest similitude to it. Here, and here only, is a persistent poison, remaining in the blood for years, neither occasioning its own elimination or the destruction of its victim, but continuing for an unlimited space of time, interfering, sometimes more, sometimes less, with the healthy processes of nutrition, and probably vitiating and spoiling every one of the secretions. In other diseases, if the secretions are universally or even extensively poisoned, and probably, in many instances, they are so, there is neither time nor opportunity for making the discovery: the patient is too much enfeebled to permit of the usual intercourse of society, and the malady terminates for good or evil too soon. But in syphilis, there are both—time, for it may endure for years, and opportunity, for it may possibly exist during these years, giving so little annoyance that even the patient himself is unconscious of its presence. How it might be with other blood diseases if they endured as long, and were as chronic in their natures, I shall not pretend to say, but really there does not seem to be anything very unphilosophical in supposing that where the blood is thoroughly tainted, every secretion and every product of it should be tainted also.

But this is too comprehensive, too general an assertion. Neither would it result in any practical advantage even if its truth was susceptible of demonstration, for most of the secretions never can come into contact with any other individual, or, if they could, are not likely to be so applied to absorbing surfaces as to convey infection. Now, it is worth recollecting that of the animal secretions which are so disposed as to become facile mediums of communication, each and every one has been regarded more or less with apprehension as capable of communicating the disease, and that not alone by uninformed persons, but by surgeons of eminence and reputation. Thus, both the breast-milk and the saliva have been considered eminently infectious, and with respect to them I am not at present disposed to enter on any inquiry, or to affirm or deny the question. There is such a probability of the existence of some crack or fissure, or other source capable of furnishing purulent matter, on the lip or in the immediate neighbourhood of the nipple, that proof in any case is next to impossible, and, in the absence of actual demonstration, he would be a sanguine theorist indeed, who in these days of professional scepticism could hope to have such a doctrine entertained for a moment, much less received and adopted as truth. Fortunately, the point does not appear to be of any great practical importance; in such cases of suspected contamination it is usually easy to trace its source, and its presence seldom involves any moral imputation. But there is one other secretion that cannot be dismissed so lightly, and, however unprepared we may be to admit the doctrine, and however contrary it may seem to the general laws of the animal economy, that two different, nay, totally different, fluids should be vehicles of one and the same poison,—I think a careful examination of facts will convince any unprejudiced inquirer that the seminal fluid possesses this most unhappy quality, and that in the mysterious process of generation it may be the medium of contamination without the intervention of a single drop of purulent matter. Now, this is (as far as I know) a new assertion, and will probably prove startling to many, but for that very reason I entreat for it a calm and unbiassed examination—not the examination of authorities and books, but of the cases actually met with in practice. Numbers are of frequent occurrence that cannot otherwise be satisfactorily explained—numbers exist at this moment where the absence of such explanation has led to distrust, and misery, and estrangement. It can only be established by observation and experience, and to these unerring tests I willingly confide it.

In the month of July, 1831, a gentleman married, being, as he supposed, perfectly free from any syphilitic taint. In the April following his wife was attacked with condylomata at the anus, tubercular swellings at the pudendum, cracks at the corners of the mouth, and patchy elevations on the dorsum of the tongue. All this time the husband never had a sore or spot of any description. He was examined carefully, and exhibited no symptom, and by his wife's account he had taken no medicine since their marriage that had tainted his breath or made his mouth sore. She had never been pregnant, and therefore could not have contracted the disease from the fœtus in utero: nor had she ever a chancre or sore that could be called a primary symptom. Both the husband and wife were subjected to full courses of mercury, and the symptoms entirely disappeared.

In the year 1836 I had a patient in the Meath Hospital, a poor but very respectable woman; one on whose word I think implicit reliance might be placed; who furnished not only an example of contamination in this way, but who suffered from the disease in its worst and most aggravated forms. She had rupial scabs, tubercular excrescences, and broad, syphilitic, secondary ulcers,—symptoms, the nature of which could not be mistaken. She never had a primary sore, nor any local affection that could have led her to suspect the nature of her malady, which she appeared to be totally ignorant of when she applied at the hospital. I sent for her husband, and examined him carefully, but could discover nothing except a very small, depressed cicatrix on the prepuce, where he had a chancre two years before his marriage, of which he had been cured without mercury. This woman never had a child, and, therefore, could not have been contaminated by a fœtus.

In July, 1840, a married gentleman, the father of several healthy children, whilst on business in London, unfortunately had intercourse with a servant-girl at one of the hotels, and contracted a sore on the penis, which was pronounced not to be venereal, and healed by topical applications. He returned in August, and in the latter end of September consulted me for sore throat. It was of that character which I am accustomed to describe as resembling the mark of a snail's track on the part, and without hesitation I pronounced it to be syphilitic. He appeared greatly distressed, acknowledged his transgression, but still seemed to lean with some hope on the opinion of the gentleman who had first seen and treated the case, and refused to take mercury, which, indeed, I was unwilling to press, as I understood his wife was far gone in pregnancy. In January, 1841, he came to me in a great fright, requesting me to see his wife, whom he feared he had disordered. I found her with several spots of button scurvy, and gave my opinion to the husband that they had a syphilitic origin: still, he was unwilling to believe in a calamity which he dreaded beyond anything in the world, and had a surgeon of eminence in consultation, who decided at once that it was button scurvy, and not venereal, and seemed to be fortified in the opinion by the fact of the lady never having had a previous symptom of any description. In the course of a few days, however, the question was settled by the birth of a child, who died within a week, of unmistakable, confirmed lues. Now, this infant had been begotten in April, three months before the father's first contraction of the ailment, and must, therefore, have been poisoned through the circulation of the mother, at a considerable period subsequently: the question is, how did that circulation become contaminated, seeing that the father had never a sore capable of furnishing a drop of matter, and the mother never a symptom of any description until the doubtful one of button scurvy, which appeared only a few days before her confinement?

In the Dublin Medical Press, October 5, 1853, the following case appeared. It was published by an acute, trustworthy practitioner, Mr. Pratt, of Woodtown, Co. Galway, who evidently had no theory to sustain, and, in giving it to the public, seemed chiefly desirous of bringing into notice a case entirely new to him, and which he regarded with unusual interest. It bears materially on the subject under consideration:—"Mrs. Kelly, aged 25, was married in April, 1853. Her husband had an attack of syphilis three months previously. He has had Hunterian chancres, followed by bubo, ulcerated tonsils, and copper-coloured scaly eruption; had been treated by mercury and iodide of potassium, which cured him of all the symptoms; continued well up to the time of joining the conjugal state, a period of three months; had no sores on the penis or any other symptom whatever. When wedded, a dubious eruption, about two months after, appeared on his leg. In about a month after marriage I was requested to visit his wife, who, he stated, had an attack of quinsy. On my arrival, I found her labouring under ulcerated venereal throat and bubo; the left tonsil was red, swollen, and in its centre an ulcer with everted margin; it appeared as if a piece had been dug out of it; the right, not so much inflamed, had a small ulcer on its inside; her voice was hoarse and somewhat nasal; she complained of pain and swelling in the left groin; on examination, detected a bubo about the size of a hen's egg, which was very red and painful to the touch, but not fluctuating. She stated she never had the least sore on the genitals; even an abrasion, she said, could not escape her attention. I could not discover any sore or excoriation by the most minute ocular examination; there could not be the smallest chancre without my detecting it. I treated her with the iodide of potassium and extract of sarsaparilla, cold lotion to the bubo, and touched the ulcers with nitrate of silver. In a fortnight the bubo disappeared; in another week the throat was healed and voice natural. She continued well for three weeks, when she complained of most excruciating pains in the tibia and frontal bones, evidently venereal periostitis. Ordered the iodide of potassium, as before, with warm bath, which did not succeed in relieving pains. I then directed small doses of mercurial pills with opium until the gums were affected, when she experienced relief; kept up the mercurial action for a fortnight, at which period she was completely cured. Tonics and generous diet restored her usual health in a short time."

The last observation I shall adduce on this subject is one made by Professor Colles, to which I attach very great importance; for he also had no theory to support, or peculiar opinion to establish; and no one can for a moment doubt either the accuracy of his observation or the truthfulness of his statements. "Before I enter on the subject of syphilis in infants," said that distinguished surgeon, "I must state a fact which, although I am unable to explain it, has yet been forced upon my observation by more than five or six instances, namely, that a newly married man, who is himself free from every appearance of syphilis and every other disease, shall yet infect his wife in such a manner that secondary symptoms shall appear in her in a few months after marriage, and these not preceded by any primary symptoms, or by any discharge whatever from the genitals."

Although this is a subject of more than ordinary delicacy, and one which medical writers rather wish to avoid, it might not be difficult to adduce more evidence, were either authority or evidence conclusive in syphilitic disease, which, unfortunately, they are not: it has already been shown to vary most essentially from all other maladies whatever; it prevails amongst persons not the most truthful and trustworthy in the world; and certainly it has not been examined with the caution and exactitude that its extreme obscurity requires. Hence, the absolute impossibility of advancing any proposition bearing upon its natural history, that will not be open to some cavil or some objection. For example, from the absence of any special notice on the subject, I understand that the females alluded to by Professor Colles and Mr. Pratt were not pregnant; and these gentlemen had no idea of their being poisoned by the fœtus in utero: others may assume the reverse; and so far, in the absence of distinct and positive evidence, the question must remain in abeyance. Unfortunately for its solution, I do not find in the cases that bear upon it any mention made either of a state of pregnancy or the reverse—nothing but a notice of the fact actually observed, without any attempt to explain it, or determine the source that immediately furnished the poison; and the reason, probably, may be, that few surgeons entertained the notion of directly connecting the poison of syphilis with the seminal fluid; and still fewer bestowed a serious consideration on this part of the subject at all. It may then, and indeed I know it will, be said that this doctrine, resting on cases observed by myself, is not supported by sufficient proof. Very true. I acknowledge the deficiency, but it is precisely for the purpose of obtaining that proof I venture to bring it forward, and in the hope that those who may acquire decisive evidence on the subject will not hesitate to make it public. But a very short time since, a young friend of mine being professionally consulted on the subject, answered that a female could not be infected otherwise than in the ordinary way, except she had conceived, when she might possibly be poisoned by her promised offspring; and as the person who had given occasion to the question was not in that condition, the opinion wrought an estrangement between her and her husband that has never since been cleared up. Now, one such case occurring in a man's experience, and the untold miseries arising out of it, ought to be sufficient to prove the necessity of practically determining the point; for, supposing this young surgeon's opinion to have been, as I believe it was, decidedly wrong, he will have been, most unintentionally on his part, the cause of an accumulation of suffering too painful even to reflect on. Often, in discussions on this subject, I have been met by an inquiry whether the woman spoken of had been examined by the speculum, and if it was not quite possible that chancres might have existed deep in the recesses of the vagina or the uterus. I never did make such examination, nor will one ever be made under similar circumstance, because there is no symptom to attract attention in that direction; but if a chancre did so exist, it must either have been the product of illicit intercourse, or communicated by a husband, who had no ulcer on himself, and, consequently, no pus in which the poison could be conveyed. It is of no consequence whether there was a chancre there or not, for its existence or non-existence forms no part of the case sought to be established, which has reference to the poisoning powers of the seminal fluid: and on this head I would simply ask, are occurrences such as I have stated to be regarded merely as accidents? Are they rare and anomalous cases, that may fall out in the practice of one or two individuals, and nowhere else? Are they exceptions only, or can they be made to constitute a rule? It is quite clear that, from their nature, they must be few in number and infrequent, and thus, perhaps, have they attracted less attention from the profession than their importance deserves: but facts, however few, are still incontrovertible, and even in my own experience I think I have observed enough of them to establish as a law of syphilis that *the semen of a diseased man deposited in the vagina of a healthy woman will, by being absorbed, and without the intervention of pregnancy, contaminate that woman with the secondary form of the disease, and that without the presence of a chancre or any open sore either on the man or the woman.* I have the satisfaction of knowing that some practitioners of undoubted ability and great experience fully concur in this opinion.

This, however, is a doctrine that will not be permitted to rest on any opinion or any authority; it must be rigidly examined, and its truth or falsehood proved. It is not a mere matter of curious speculation, neither is it one of physiological interest alone: it is eminently practical, and may exercise a telling influence on concerns more valuable than life. But as everything pertaining to syphilis has hitherto been wrenched and twisted out of its proper form, in order to be adapted to some favoured theory, and as it is vain to hope for the easy removal of long established prejudice, it must be to those who have not yet entered on the inquiry, whose minds are not preoccupied, that we must eventually look for trustworthy information on the subject. The investigation of this formidable disease is still an open, unbroken field, that will amply repay the labour of cultivation. Most non-professional persons believe that there is but one mode of contracting syphilis, and must feel doubtful and uneasy at perceiving it in persons and under circumstances which, consistently with such a notion, cannot be satisfactorily explained. Now, any surgeon consulted on one of these suspicious cases, if he conscientiously believes that purulent matter alone can be the vehicle of contamination, must not hesitate in saying so; and that opinion may destroy a virtuous and unsuspecting female, and consign a respectable family to lasting misery and disgrace. But such a man may remember, and if he neglects to inform himself fully on the subject, he will remember afterwards with regret, that in thus acting, he may possibly have been in error; for, that men who have studied it, with great opportunities and no little diligence, have held totally different opinions.

I have now to direct my attention to another, but not less important question.

Most, I believe I might truly say all, other morbid poisons with which we are acquainted produce their full effects with great rapidity, and work out their terminations for good or evil according to certain laws, which they obey with a degree of regularity that admits of no exception; thus, the inoculations of hydrophobia, glanders, dissection wounds, bites of serpents, small-pox, and several others, however they may differ among themselves in their periods of incubation and manner of developement, agree in affecting the system in all its susceptible parts at the same time, and in coming, without pause or delay, to their legitimate terminations. But syphilis, although there may be good reason to think it contaminates the whole system very quickly, yet exhibits the effects of that contamination with comparative slowness, and always, apparently, step by step, occupying part after part, and structure after structure, in such wise, that there is or seems to be a certain order or arrangement of parts through which the disease ought successively to pass, each part exhibiting a class of symptoms proper and peculiar to itself. Of course, this assertion must not be taken as logically and universally true, because there are, occasionally, some deviations from it; but it is sufficiently correct to be received as the usual and general law, and involves in its exceptions some of the most obscure and difficult points in the theory of the disease. Thus, syphilis first appears in the form of a minute sore or ulcer, from which the poison is or seems to be absorbed into the system, the evidence of which absorption is sometimes seen in the swelling and suppuration of a gland in the vicinity. These disappearing, are, after a time, succeeded by affections of some of the fibrous tissues, by nocturnal pains, eruptions on the skin, or by ulcers in the throat. These again, at a later period, are followed by cracks and ulcers of the lips, fissures and condylomatous swellings on the tongue, verrucæ and fici at the anus, deeply seated inflammations of the eye, and enlargements of the testis. Finally, the periosteum and the bones become engaged, and I believe the internal organs also, until, worn with suffering, and often loathsome to himself and others, the miserable patient sinks and dies. Now, this is but the description of a persistent poison, working slowly, to be sure, but steadily and unceasingly, to its normal termination, having long and large intervals, perhaps, between the development of each succession of symptoms, but still raising them with sufficient regularity and frequency to make its presence known, and to keep the patient sensibly alive to the misery of his condition. Ricord says, that when no specific treatment has been employed, and when the disease has been left to its natural course, " six months never elapse without syphilitic poisoning manifesting itself;" and he adds, " six months! yes, and even six months is a very long period, for most frequently secondary symptoms make their appearance from the fourth to the sixth week; frequently in the second or third month; and rarely in the fifth or sixth. It is a truth which cannot be too often repeated, and the results of which follow as certainly as those of Galileo." There can be no doubt of the general accuracy of this statement; but I would now ask, is there any exception to the law—is such a state of activity indispensable—or does a contrary condition ever exist? Can a case possibly occur in which a secondary symptom never appears, or, appearing, be so trifling as to escape attention? May the poison remain latent or quiescent in the blood for months, or even years, and afford no indication of its presence? and may the dormancy of this state be so perfect that the patient shall be totally unaware of his condition, have forgotten the previous existence of any disease, and believed himself healthy, until painfully convinced to the contrary by some unhappy communication of infection? Answers to these questions will exhibit the peculiarities of the venereal poison in a point of view more striking than any in which they have yet appeared.

So long ago as the year 1824, the late Dr. Beatty, in a paper alluded to on a former occasion, stated his observation that married females had frequent miscarriages and dead children, occasioned by a venereal taint, although no symptom existed to indicate the nature of the cause. The remark was, at the time, original, and attracting, as it deserved, a good deal of professional attention, it aroused a spirit of observation and inquiry, which ended in the establishment of the fact beyond doubt or contradiction; and it is now very generally understood and acknowledged by the medical practitioners in this country, that the fœtus in utero may be poisoned by the disease existing in the father and mother, although not even a suspicious symptom can be discovered in either. Thus, this poison, that may be so entirely suspended in its effects, and circulate so harmlessly as not to give any indication of its presence, nevertheless preserves its mischievous qualities in such perfection, as not alone to be capable of communicating the disease, but of conveying it in its most complete and concentrated form, and endowed with all the virulence it can be supposed to possess; for in all children is the character of the disease the same; in all is the contamination thoroughly and entirely finished. In this does infantile syphilis differ from that of the adult, that it has no stages to pass through—no successive organs, or tissues, or orders of parts to attack, but has already infected every spot susceptible of its influence, and contaminated and spoiled the entire body. Many young and respectable females suffer repeated miscarriages at different periods of gestation, and often bring forth the fœtus in a decayed and putrid state, without ever entertaining the slightest suspicion of the cause: sometimes they go the full time, or nearly, but the child ceases to move three weeks or a month before the expected time of parturition, and comes into the world not only dead, but decomposed, the cuticle peeled away, and the skin red, and moist, and flabby, as if it had been for some time undergoing the process of maceration. Again, one of these women may go her full time, and be delivered of a fine and seemingly healthy child (for in such the pocky symptoms are not observed at the actual period of birth), but in the course of three or four days, or somewhat later, the little creature refuses the breast; screams continually in a weak and raucous voice; the angles of its lips crack; the mouth is surrounded by a copper-coloured eruption, sometimes fissured, sometimes branny; the insides of the mouth and fauces are white and dirty; a copper-stained blotch appears over the nates and privities, which soon become excoriated and exude a fetid sanies; and detached spots of a copper, and sometimes of a purplish hue, appear on other parts of the body; the child's features become contracted, and assume the appearance and expression of premature old age, and it pines and dies rapidly, seeming to suffer great pain, for its hoarse cries and screams are incessant. Or, it may happen that the symptoms shall appear much later, even by a fortnight or three weeks; or that they shall be of a much milder character, and allow time and opportunity for the administration of the remedy. In a word, there is some variety as to the time of access and severity of symptom, but little or none as to the complete character of the disease. Now, when a case of this description occurs, it is perfectly clear that the child has some confirmed constitutional disease, which it brought into the world along with it, and, therefore, inherited in some manner or other from its parents: it is also clear that this disease is not and cannot be the result of an inoculation or local infection derived from its mother *in transitu*, for such would only appear at one spot, and never run its course to destruction with such rapidity: and it is but too frequently as well as too painfully proved that this affection is genuine syphilis, by the fact of the infant communicating that disease to any woman, except its mother, who may undertake the duty of nursing it. Further, it is now familiarly known, and has been repeatedly proved by experience, that during all this time the father and mother may not have exhibited a single tangible symptom—not the smallest speck or sore that could furnish a solitary drop of purulent matter; and, therefore, we are forced to the conclusion, not only that something else beside that matter may be and is the vehicle of contamination, but that the infecting principle may exist for months or years within an individual without his cognizance of it, or his ever experiencing any symptom that could awake anxiety or create alarm. The only possible mode of otherwise solving the difficulty is by boldly denying that these infantile affections are syphilitic; and if they are not, what are they? What occasions the chancrous ulcerations about the nurse's nipples? What the cracks and fissures in the lips of any one that tends and fondles the infant? What is it that spreads its foul influence through every member of the family, as so truly and so graphically described by Dr. Colles? Many, I am fully aware, have been driven to deny the existence of infantile syphilis, but no one can deny that cases such as I have described frequently occur, because the experience of every hospital furnishes convincing evidence to the contrary; and let them only provide these affections with a name. For my own part, I believe it to be true and genuine syphilis; and, knowing what a number of important facts, in connexion with the natural history of the disease, are illustrated and explained by the infantile disease, I shall endeavour to avail myself of its assistance a little further.

It happens not unfrequently that medico-legal questions arise, on which may depend the peace, the happiness, and the respectability of families, and which can only be answered by one intimately acquainted with the natural history of the disease; and surgeons are occasionally greatly teazed, and sometimes thrown into positions of considerable embarrassment, by being obliged to give distinct and positive evidence as to pocky children, and nurses disordered by them, without having fully considered and mastered the subject. I believe it has happened that a nurse has actually sought for a child of this description, in order to extort money from its parents, and certainly many families have been placed in extremely painful situations under such circumstances. Let us, for example, suppose a young and unsuspecting female, after a number of miscarriages, to give birth to a weak and sickly child: she nurses it herself for some time without experiencing any personal inconvenience, but observes that the infant is pining and delicate, has some kind of eruption on its body, and every day becomes more feeble; she is induced to believe her milk is unwholesome, or not sufficiently nutritive, and provides a nurse, who soon gets ulcers on and around the nipples, and if she does not suspect the nature of her disease, and take precautions accordingly, infects her husband, and, in the end, spreads the disease through her entire family. Then, let it be supposed still further, that a surgeon is called upon to investigate this case. He finds both the father and the mother of the child apparently free from anything calculated to create suspicion: true, they may be delicate, very susceptible of fatigue from slight exertions, prone to take cold, often suffering from headach, or pains in the limbs resembling rheumatism, but wholly and entirely exempt from speck or spot, or sore or ulcer, of any description. How can the disciple of John Hunter—how can the believer in the theory of purulent matter being alone infectious—or, still more forcibly, how can the follower of Ricord, or of any one that adopts the strange notion that the poison resides only in the early formed matter of a chancre, afford any explanation of this case, or of any of the phenomena attendant on it? But if he is persuaded that the poison may lie dormant in a man for months and years; that by the intercourse that takes place between them, that man may infect his wife; that neither of these parties may exhibit a single tangible symptom, and yet, year after year continue producing diseased and pocky children; that any of these children may be tended and suckled by its mother without the infection being returned on its parent source, but that, given to another woman, it will soon and certainly contaminate her—then he will find the explanation of these difficult and important facts easy and familiar, whilst the facts themselves tend to illustrate and establish the opinion. But however satisfied in his own person any surgeon may be as to the conditions of such a case, he may find it a very difficult task to make another understand him. Men are accustomed to connect the idea of disease with more or less of present suffering: they cannot conceive how an individual may be deeply infected, and exhibit no sign or symptom of the taint; neither can they well comprehend why a child's mouth should certainly poison one individual, and be altogether harmless to another: in fact, they cannot believe in the persistence of a diseased condition for years, neither killing the patient nor wearing itself out, exhibiting no sign or token of its presence, yet capable of being communicated to another: and, after all, it is chiefly in this persistence that the peculiarity of the syphilitic poisoning consists, and by which it differs from every similar known affection. When this is fairly understood, the chief difficulty of the subject vanishes away.

It is most interesting now to observe how all these properties of the syphilitic poison, seem, as it were, designed to assist in increasing its capability of diffusion; its continuance in the system during an unlimited period; its exhibiting no symptom, as if to lull suspicion and throw its victim off her guard; its not occasioning fever or sickness, or confinement to bed, or greatly interfering with the strength or physical powers,—all tend to minister to its diffusion by various channels, but principally through the offspring of the infected. As the morbid poison of syphilis is special and peculiar in being persistent, so is it special and peculiar in being transmitted by hereditary descent; and when it is considered that consequences may in this way be induced, that no foresight could anticipate, and no precaution prevent, it will require no argument to prove that this form of infection possesses a facility of propagation above that of any other disease whatever. For example: what wife can protect herself from the consequences of a tainted intercourse, her husband fully convinced that he had been cured of the disease from which he had formerly suffered, and of which he had not observed a symptom for a considerable length of time? What nurse will suspect danger from a baby received from parents apparently free from any disease? And when all the channels in which this one source of infection may subsequently be impelled come to be considered, perhaps the chief subject of surprise ought to be, that the disease is not more extensively diffused. These are not mere matters of speculative doctrine, neither are they the results of theoretic reasoning: they are not to be disposed of by assertions, that the poison never affects the fœtus, nor can mistakes be excused by sheltering under the names of Hunter or of Ricord; they are matters which come upon us with overwhelming practical interest, on occasions when there may be little time for reflection, and none for preparation; and which every student of syphilis should earnestly and anxiously investigate for himself. The opinions of Ricord are beginning to be held in considerable estimation in this country, and young men speak flippantly and confidently of them, as if they rested on infallible authority, had entirely exhausted the subject, and rendered any farther investigation quite unnecessary; but if the pus of the ulcerating or stationary chancre alone can convey the poison, how comes it that among the better and more educated classes, a wife is ever infected, or a pocky offspring ever born, seing that in this country men generally seek to be at least apparently cured, and free from obvious disease, before they incur a risk of this description? Or how is it that a nurse is ever contaminated, when it is certain that a child can have no primary sore of any kind or description, or in any state or stage of progress? It will be difficult to believe the evidence of the senses, and receive these modern doctrines implicitly and without dispute.

Art. VIII.—*Observations on some of the Complications of Fever.* By A. Hudson, M. D., Fellow of the King and Queen's College of Physicians, late Physician to the Navan Fever Hospital.

I.—Cerebro-spinal Complication.

In offering to the readers of this Journal some of the results of a pretty long experience of fever, in the form of desultory reflections on the diagnosis and pathology of its more important complications, I commence with those engaging the nervous system, as by no means the least interesting or important, it being well known that to them the fatal result is to be attributed in a large proportion of cases of fever; while in others the recovery of the patient is due to the sagacity with which they may be recognised—sometimes even anticipated—and the promptitude with which they may be met by suitable treatment.

The difficulty of a diagnosis of the nature of the various nervous derangements occurring in fever, and of their relation to this disease, arises from several sources; for example, we sometimes find it not easy to determine whether cerebral or meningeal inflammation is primary or secondary, the cause or effect of fever; in other cases, whether cerebral symptoms are due simply to the fever poison, or its complication with inflammation, or whether, with this last condition, there is also one of the many forms of secondary blood contamination. Occasionally, also, the period of crisis is marked by various nervous derangements peculiar to itself, but yet not easily discriminated from those of a more serious nature. In a condition so complex, perfect accuracy of diagnosis is not to be attained, but we shall be assisted in an approximation to it by a careful consideration of the influences acting on the function of innervation in fever; of the various modes in which these functions are deranged in this disease; of the results of the investigations of morbid anatomy; and lastly, of the effects of certain modes of treatment, of which we shall meet with illustrations hereafter.

The influences which determine the existence and the mode of nervous derangements in fever appear to be more especially the following:—1. The fever poison, which produces effects varying according to the nature and type, and the prevailing epidemic tendency, cerebral symptoms of different forms prevailing at different periods; 2. Acute inflammatory congestion of the brain or membranes; 3. Previous states of the cerebration—whether intellectual or emotional—by which the nutrition of these centres is impaired, constituting predisposition of the organ to suffer the influence of the fever poison, or of other morbid agents; 4. Certain states of the blood, to which we may give the general term of secondary-blood contamination.

If we review the different functions of innervation, we find that the mode in which these are deranged varies according as one or other of the above influences may predominate. The fever poison *per se* depresses nervous energy, and the lesions of nervo-muscular force caused by its direct and uncomplicated action seldom amount to more than various degrees of debility, that is, of diminution of muscular power; or to diminished control of volition over muscular movements. The former is first manifested in the voluntary muscles, the limbs and the tongue tremble, and their movements are performed languidly and feebly; but as fever advances, the automatic and involuntary suffer, swallowing becomes difficult, respiration laborious, and the heart's action faltering and irregular. Meantime, as the control of the will is withdrawn, involuntary excito-motor actions occur, either spontaneously in the form of subsultus or tremor, or they arise upon such impressions being made on these centres as should normally excite voluntary movements of another kind; thus we occasionally see violent facial twitchings follow the putting a spoon to the lips, and Dr. Laycock narrates a curious instance in a glassblower who, on attempting to drink, blew involuntarily into the cup every time it touched his lips,—the will being powerless against the incident excitor stimulation, which had been habitually applied in the exercise of his daily occupation.

But of a different character to these reflex actions are those arising from inflammatory irritation of the nervous centres, or from secondary blood-contaminations; such are the retraction and flexure of the arm on attempting to feel the pulse; the sudden clutching of objects with the hands, the rigid closure of the jaws, or retraction of the head, the convulsions of uremia, &c.

Derangements of sensation, like those of motility, are among the early and normal effects of the fever poison, but become signs of cerebral irritation when they occur out of their order as to time—such as early deafness or the headach of a later period—or with undue severity. Towards the termination, indeed, of simple and uncomplicated fever, if severe, profound lesions of the sensational consciousness are sometimes exhibited, such as anæsthesia of sight and hearing, insensibility to cold or to thirst[a] (a true anæsthesia), and to the impressions by which the active contraction of the sphincters are regulated.

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[a] It has lately been maintained by some writers that want of thirst arises from a lesion of the function of nutrition. I think the old writers were correct who, like

The mental consciousness may be variously modified by the intoxicating action of the fever poison, its heightened state being marked by watchfulness, the opposite condition by coma or stupor. In some cerebral complications we witness the alarming combination of watchfulness and stupor, but usually associated with the former there is a morbid quickness of apprehension; the patient talks more rapidly and answers instantly; his senses of hearing, taste, and touch, are morbidly acute; and, while his skin is hot, he is much alive to the impressions of cold upon the surface of the body. This form of derangement is met with chiefly in youth, or early manhood, in the overworked brain of the student or anxious professional man or merchant, and in the spirit-drinker, if young.

The opposite affection of the consciousness is to be dreaded, if early in the fever the patient shows more than usual somnolence and stupor, with sluggishness of perception; if aroused with difficulty, he lapses immediately into slumber; if he protrudes the tongue slowly and hesitatingly, and does not withdraw it promptly; if he refuses to drink, or does so listlessly and imperfectly, allowing the fluid to run from his mouth, or coughing after each attempt. When such symptoms are associated with lesions already alluded to, we may fear that stupor will merge in fatal coma.

The function of intellect is one most frequently deranged in fever, more especially in typhus, and in a mode characteristic of the intoxicating action of this poison. The aspect of the typhus patient has been aptly compared to that of a man awaking from a drunken slumber: his apprehension is in a similar manner confused and imperfect; impressions made upon his senses are imperfectly perceived by the sensorium, producing the phenomena of dreaming without sleep; he talks incoherently about external objects, confounding them with internal impressions, or with the imperfectly remembered objects of past sensations; sometimes he seems to be for days together under the influence of some painful dominant idea, the product, as it were, of confused perception of the present, and imperfect recollection of the past. This painful state is sometimes produced by injudiciously excluding the light. Cullen mentions in his Physiological Lectures that in his own fever the admission of light, by rectifying the perception, and supplying the diffe-

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Willis and others, taught that it was a lesion of sensation,—a nervous symptom forming one of a group of the most serious characters. Willis's expression regarding those in whom the symptom was associated with low temperature is: "Quippe ad hunc modum affecti circa morbi statum, plerumque in deliria, motus convulsivos, et non raro in maniam incidunt; e quibus brevi in mortem precipitantur."

rent parts of the complex idea to his mind, removed much of his delirium[a]. The memory is so deficient that the patient, who seems while in fever to recognise his attendants, calling them by name, becomes immediately afterwards unconscious of their previous presence—albeit the memory of his hallucinations often remains after recovery—while the judgment seems often but little impaired, the patient being sometimes capable of sustaining conversation, and giving judicious directions: there is, however, one exception to this remark, the patient has no adequate idea of his own condition. In some very rare instances the power of the will over the ideation has been retained, and even the memory of the thoughts; one highly gifted gentleman, whom I attended in a long fever, in which he had much occasional delirium, has assured me that he not only recollects, but has since made use of, long trains of thought which passed through his mind during his fever. Such cases, however, are the exception, and probably confined to minds of a superior order, and usually volitional control is lost; the character of the delirium varying according to the age, mental activity, temperament, previous habits, &c., of the patient, and according to the state of the cerebral circulation, and the existence of secondary blood-contaminations, &c. It may be observed, with truth, that nothing can be more varied than the various forms of delirium met with in various pathological states, and at the same time nothing can be more unscientific or unsafe than to attempt to diagnose these states by the kind of delirium: thus the delirium of exhaustion, and that complicating pneumonia or typhus, are sometimes equally noisy and impulsive; while depletion in the one would be scarcely less fatal a mode of treatment than a full opiate in the other; yet some recent writers have proposed to deduce from the form or character of the delirium a diagnosis of the portion of the brain affected with inflammatory irritation in fever.

It cannot be said that morbid anatomy gives much aid to our diagnosis, or that the symptoms during life are much explained by the appearances found in the brain after death, with which, indeed, they have often no apparent connexion. We may often meet with congestion, but this may arise from the state of the blood, the position of the body, the condition of the pulmonary circulation, the mode of death, &c. Even when due to the action of fever, it cannot be regarded as a primary pathological phenomenon, any more than in death from other poisons which present a close analogy of action to that of fever. "In poisoning by opium or belladonna," says Dr. Todd, "it is the congestion, some will say, which causes first the delirium, and afterwards the coma: the effect of the opium is to cause congestion; the effect of the congestion is to compress the brain. But this explanation will not bear the test of careful examination. The congestion is rather the effect of the injury done to the brain and to the blood by the opium, whereby the attraction of the materials from the blood suited to the nutrition of the brain is retarded, and ultimately stopped. But this force of attraction between the blood and the tissue is a powerful agent in the maintenance of the capillary circulation: when, therefore, it is impaired, the blood moves slowly and feebly through the capillary system, and there is need of increased force on the part of the heart to keep up the circulation at all. Hence, then, in cases of this kind, the congestion is due to the condition of the blood itself; in fact, to its contamination by the poison which has been introduced into it."

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[a] Life, by Thompson, vol. i.

The same is true of another morbid appearance frequently noted, subarachnoid effusion, often erroneously considered an inflammatory lesion, but in reality a consequence of deranged nutrition, and shown, by Dr. J. Reid's researches, to be more frequently connected with the age of the patient (probably, also, with his previous habits of intemperance, and with want of sleep) than with either fever or inflammation[a]. Occasionally, however, and more especially at certain epidemic periods, we meet with the products of true inflammation in the forms of minute arterial injection of the convolutions, recent opacity of the arachnoid covering the hemispheres and base of the brain, exudation of turbid and gelatiniform serum, and lymph under the arachnoid and in the ventricles; and, more rarely, of acute softening or purulent infiltration of portions of the brain. In some instances these appearances are due to primary inflammation, arising out of the previous condition of the organ or exciting cause of the fever; in others, to the reactive irritation supervening on passive congestion or typhic deposit; in some they appear to occur under special epidemic influence; in all, they are the result not of fever alone, or of inflammation simply, but of this state combined with fever, or toxæmia, or both. And inasmuch as fever not only simulates local lesions, but also masks these when they actually exist, careful observation and analysis of the symptoms is required to ascertain their presence and amount.

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[a] Physiological and Pathological Researches.

Passing by the lesions of innervation due to the simple and uncombined action of the fever poisons—severe and fatal as they often are—as too familiar to need illustration, we next meet with a group in which we recognise the influence of active congestion or inflammation of the brain or membranes.

In patients of this group the manner is at first quick, excited, and restless, but in some few it becomes at once heavy, stupid, and somnolent; the face and forehead flush, and again become pale; there is a constant knitting of the brow, increased on the admission of light; one or both eyes become suffused, and the pupil usually contracted; there is generally intolerance of sound and tinnitus, sometimes early deafness. While the normal headach of fever declines about the period that delirium commences, in this complication it increases, or perhaps comes on for the first time at an advanced period; the patient, in general, is loud in his complaint of the pain, which is of a heavy, throbbing character; at first, all motion of the head is instinctively avoided, but at a later stage it is rolled upon the pillow incessantly, sometimes tremulously; the respiration (cerebral) is hurried, or sometimes fast and at others slow, interrupted by frequent sighing, which has at times a catching, spasmodic character. The circulation is variously affected: the pulse, at first rapidly accelerated, usually falls soon below the natural standard, or becomes still more hurried and irregular on the slightest movement, being small and constrained at the wrist, while the carotids throb, and the heart's impulse is strong and jerking, and its first sound augmented; the muscles of the neck, and sometimes of the limbs, become rigid, and there is frequently muscular, as well as cutaneous dyæsthesia, the patient screaming on being attempted to be moved; there is green vomiting, persisting for several days, in a large proportion of cases: frequently the pasty fur on the tongue presents a bright green colour[a]; the urine is usually scanty, and of high specific gravity.

It is to be remarked, that this complication is apt to occur epidemically, when it assumes many of the characters of cerebro-spinal arachnitis, so well described by Dr. Mayne: occasionally, too, it would appear to be the effect of malaria[b]. Of five well-marked examples of this complication, which I have

[a] A valuable sign, to which my attention was drawn many years since by my friend, Dr. Toler. I have frequently observed it also in arachnitis, both idiopathic and from injury.

[b] Dr. Graves relates a curious instance of fever complicated with symptoms of cerebro-spinal meningitis, attacking five individuals in one house, two of whom were servants. The exciting cause was, in all probability, malaria.

seen in private practice during the last two years, four were to be distinctly referred to this exciting cause: in all, the fever was of the *typhoid* species.

Two of my patients were medical students, in whom the disease was watched, and its progress noted, with more than ordinary care.

In the first of these the cerebral symptoms set in on the invasion of fever, masking it completely for several days. This gentleman was seized with shivering, followed by headach and remarkable soreness of the surface, green vomiting, and strong jerking action of the heart. To these were soon added painful rigidity and retraction of the neck; the left arm, and subsequently the leg, became also rigid, numb, and painful, the fingers being strongly and painfully flexed on the palm. Leeches were applied in relays, first of eight, and afterwards of six, behind the ears, each time with partial relief of the painful state of the neck and limbs, and, on the third application, with complete relief. Rose-coloured spots appeared on the ninth day, and the fever ran through its usual course. At the period of crisis there was a partial return of the rigidity of the neck, with pain in the arm and slight contraction of the fingers, but these yielded on the application of a blister to the neck.

A few days after crisis this gentleman was attacked by pleuritis, with signs of copious fibrinous effusion, from which he slowly recovered.

In the second patient the cerebral symptoms set in at a more advanced period of the fever, the access of which was very gradual. When I first saw him, on the fourteenth day from the first feeling of indisposition, he presented the usual phenomena of typhoid fever: he had distinct rose-coloured patches on the trunk and arms, meteorism, gurgling over the cæcum, great increase of the limit of dulness over the spleen; there was but slight diarrhœa, but he had repeated returns of vomiting during the preceding week; the urine was high-coloured, and in small quantity.

His face at this time was clear, with a bright flush; pupils rather dilated; he had very slight headach; and had epistaxis for three preceding days. The heart's action was natural, rather weak than otherwise; pulse, 100; respiration rather high and accelerated.

On the eighteenth day headach had become very severe, attended with slight delirium; tremor of the hands and arms was also first observed; the pulse rose to 128; respiration loud and nasal, 36 in the minute. In the course of the next twenty-

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four hours a marked change in the face was observed; the right eye became minutely injected, while the left remained clear; the flush became deeper and constant, and spread over the forehead; the brow was knitted; at intervals of ten or fifteen minutes a slight spasm seemed to pass over the face, the eyelids closing, and the eyes rolling under them; at the same time he moaned faintly, and thrust out the right arm, clutching the bedclothes with the hand[a]. I happened to be sponging his hands at the moment when one of these paroxysms occurred, and on the instant the fingers closed on the sponge like a vice. He had slept for four hours on the night between the eighteenth and nineteenth days, but his sleep was noisy and distressing, his respiration appearing more laborious than when awake, and accompanied by loud moaning. As he had now retention of urine for twelve hours, it was drawn off, and was found to be albuminous, and containing blood-corpuscles.

On the twentieth day there was little change: he had involuntary discharge of urine, with partial retention, and the cerebral symptoms continued as before, with injection of both conjunctivæ, and dark flush of face and forehead; the heart's action was remarkably strong and jerking.

Twenty-first day. He had a good night: consciousness much improved, and passed urine voluntarily; pulse 108; petechiæ fading fast.

Twenty-second day. Still improving: urine loaded with pale lithates, not albuminous.

Twenty-third day. All the signs of reactive irritation of the brain had set in. The sleep had become more noisy and laborious than ever; the eyes much injected; the face deeply flushed, of a purple hue; skin hot, with great thirst; the heart's action was jerking and impulsive; pulse 132; respiration high, laborious, and irregular. In consultation with Dr. Lees it was agreed to apply four leeches behind the ear, a bladder half filled with ice to the head, and to give three grains each of hydrargyrum cum cretâ and antimonial powder, three times a day.

Early on the morning of the twenty-fourth day a gradual change took place: he breathed more easily, slept more quietly, the face became less flushed, and in the course of the day the pulse came down gradually to 92, at which point it remained for several days, during which he steadily improved in all respects.

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[a] On this and the two following days the patient manifested symptoms of uremic poisoning of the blood, due partly to renal congestion, and partly to retention of urine. These abated on the urine being drawn off, and disappeared as the albumen and blood corpuscles disappeared from the fluid.

On the twenty-seventh day, however, another change occurred. After a sudden and violent fit of coughing, he was found on our visit with a flushed face, hot, dry skin, rapid pulse, and hurried breathing; he had no headach or nervous symptoms, and his intelligence was perfect, his only complaint beyond the cough being of the intolerable heat of his skin, and his constant demand being for a warm bath. On examination the right side of the chest was found to be dull on percussion, both anteriorly and posteriorly, in its superior half, the respiratory murmur being almost inaudible, muffled, and mixed with slight sibilant rales. The expectoration was scanty and extremely viscid, and during the following three days was occasionally tinged with blood; examined under the microscope, it was found to contain a few pus-corpuscles.

This pulmonary congestion was, apparently, resolved by a critical effort. On the twenty-ninth and thirtieth days copious sweating came on, accompanied by deposit of lithates in the urine, and from this date the signs of solidification gradually disappeared, and his convalescence again for a time proceeded. It was again interrupted by the formation of an abscess in the prostate, causing complete retention of urine, but, on this being opened by Mr. Porter, all bad symptoms disappeared, and he recovered steadily and completely.

The occurrence of inflammation with plastic exudation in the chest, ascertained in the former case, and inferred from several signs in this, deserves to be noticed, as a similar tendency to the double inflammation has been observed in some former epidemic periods by different writers.

When the case comes under observation at an early stage, and the symptoms coincide with the above outline, the diagnosis is not difficult; but in a patient seen for the first time in the second week of fever, one of two sources of embarrassment often exists. Either the symptoms of cerebral irritation may have become masked by those of asthenia, and the patient's condition, on a superficial review, may present nothing differing from that of a brain suffering under the action of the fever poison simply; or, active depletion having been employed in the early stage, violent delirium or mutism, subsultus, tremor, and convulsions, occur from exhaustion, and are not unfrequently mistaken for the symptoms of the primary inflammation.

Of the first of these Dr. Graves justly observes:—"It is in many instances extremely difficult to distinguish the cerebral symptoms produced by the poisonous influence of fever on the brain from those which depend on true inflammation. The one gives rise to delirium and fatal coma as well as the other; and in the advanced stage of fever, when the manifestations of nervous energy are feeble and imperfect, and when the circulating and respiratory organs act with diminished power, the distinction between irritation and actual inflammation becomes a matter of great difficulty." Daily experience proves the truth of this observation, and yet no practical distinction can be more necessary; witness the many cases of masked inflammation treated mistakenly by wine and opium, and the still more numerous cases of purely febrile delirium treated by depletion. Nor do I believe that such errors can ever be altogether avoided, even by the most experienced, or that we have any *single* positive and certain sign by which the two forms of disease can be in all cases distinguished. There are, however, several worthy of attention, more especially if met with together. The first is the state of the consciousness, which in cerebral congestion at this period of fever presents the double derangement of watchfulness and stupor, with a delirium usually of an impulsive character. If unable to rise, the patient is still restless, rolling his head on the pillow, not unfrequently rolling out of the bed,—in a word, not presenting the supineness of the intoxicated fever patient. Neither is the expression of his countenance the same: there is usually some degree of knitting of the brow, with contracted pupil and suffused conjunctiva; his muscles, whether flexed or extended, are rigid; his teeth firmly set; if he lies on his back, with his knees drawn up, it will be found that his heels are firmly pressed against the buttocks; at other times the extended limbs will present the combination of rigidity with tremor. The respiration is disproportioned to the rate of the pulse, and there is a loud and forced inspiratory murmur heard over the chest; the heart's sounds present that kind of augmentation caused by running or other over-exertion, but if the heart's tonicity is impaired by the fever poison, its muscular structure having become softened, the first sound may be inaudible, and its impulse imperceptible[a]. Cerebral irritation is then to be detected by the greatly increased frequency or irregularity of the pulse on the slightest movement or excitement, or on the exhibition of wine or stimulants; at the same time the head becomes hotter, and the extremities colder; the respiration more hurried and irregular, and the reflex actions, rigidity, restlessness, and jactitation more marked. Whenever these follow the exhibition of wine in fever, there can be little doubt of the existence of active cerebral congestion, no matter how advanced the period, or how apparently debilitated the patient, and accordingly here, for example, *treatment* becomes a valuable subsidiary to other sources of diagnosis. From my notes of many similar examples, I select two abstracts of cases which came under my own observation, and in which the symptoms during life and the appearances after death illustrate the observations I have made above.

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[a] It is unnecessary to state that our knowledge of the signs of softened heart in fever, and their applicancy to its treatment, is entirely due to the researches of Dr. Stokes, commenced in the fifteenth volume of the Dublin Medical Journal, and completed in his great work on Diseases of the Heart.

A girl, aged 16, was admitted into hospital on the twelfth day of fever. She was not maculated: nothing unusual or unfavourable occurred after admission until the evening of the nineteenth day, when she became suddenly delirious, being found by the nurse walking about the ward.

On the twentieth day the delirium continued, and she attempted to leave her bed frequently. The pulse had risen from 90 on the preceding day to 100, but was small and constrained, while the heart's impulse was strong and widely felt. She was ordered four ounces of wine.

On the twenty-first day there was less active delirium, but a tendency to stupor; the pulse rose in the evening to 120; heart as before.

Twenty-second day. She is reported to have slept for a very short time, for the first time since the nineteenth; less stupor, but great irritability; the arm is strongly retracted on attempting to feel the pulse; the heart's action strong and jerking.

Twenty-third day. Sleeplessness, restlessness, and general soreness of the surface, coldness of extremities; thready pulse, 120; with jerking action of the heart.

Twenty-fourth day. Stupor passing into coma. Death.

On examination the surface of the brain was found minutely injected, the convolutions slightly flattened, the arachnoid thickened and opaque in patches on the surface of both hemispheres. The substance of the brain was unusually firm, and extremely vascular, presenting very numerous red points on being cut across; there was considerable effusion of serum in the ventricles and at the base, and the large arteries of the base were in a most congested state. The heart was empty, contracted, and firm in structure, quite healthy in appearance in every respect.

In the above instance the cerebral congestion, no doubt previously latent, did not manifest itself until an advanced period of the fever; in the following it set in early.

The patient, a middle-aged man, who had contracted fever by exposure to contagion, was admitted into hospital on the sixth day. He was maculated, with cold extremities, tendency to stupor, low delirium, inability to protrude the tongue, and involuntary evacuation of urine and fæces.

On the day following (the seventh), prostration was more marked; there was low delirium, with stupor and sleeplessness; pulse 112, and weak; heart's impulse weak, and first sound indistinct. He was ordered four ounces of wine.

On the eighth he had continued sleeplessness and increased stupor; dysphagia, and difficulty of protruding the tongue; pulse 120, and weak; heart's impulse stronger, and first sound more distinct.

On the ninth he had convulsions, which continued for nearly three hours without intermission, and ceased on the apothecary taking five ounces of blood from the temporal artery, leaving distorted mouth, and ptosis of one eyelid. He had one slight return of convulsion before his death on the following day (tenth), and gradually sank into coma, the pulse becoming imperceptible, but the heart's action jerking and excited to the last.

On dissection the appearances were similar to those of the preceding case: the convolutions being flattened, their surface red, and minutely injected, with very copious effusion of serum in the ventricles. The heart was firmly contracted, its cavities empty, and its structure apparently healthy.

Several examples have occurred in my experience of this gradual supervention of active congestion in the *over-worked brain*. The following is a short summary of one interesting case.

A lady, aged 35, of nervous and excitable temperament, who had lately been subjected to unusual exertion and mental anxiety, was attacked by typhoid fever, which for the first fortnight presented no peculiar symptoms. I was first called to see her upon the sixteenth day, when there was much prostration, with a dark, muddy hue of the face; dark, thinly scattered petechial eruption; tympanitic distention of the abdomen, with tenderness and gurgling over the ileum, and gritty, ochrey diarrhœa; the urine natural in appearance and quantity; the breathing was high and frequent, without any appreciable bronchitis; the heart's action feeble (particularly so); and the pulse feeble, ranging from 120 to 130; the intelligence was dull, but otherwise undisturbed. With a view to moderate the diarrhœa and support the strength, a small blister was applied over the ileum, and she was ordered decoction of bark and muriatic acid, with port wine. A gradual salutary reaction followed these measures, and between the eighteenth and nineteenth days a favourable crisis seemed to take place; slight perspiration occurring, with copious deposit of pale lithates in the urine. On the following day, however, my attention was aroused by the turgescence and purple colour of the patient's face: her breathing had become hurried, 52 in the minute, with laboured, jerking inspirations, while careful examination of the chest discovered no pulmonary lesion. The most marked sensibility and soreness of the surface had also come on, and she had, for the first time during her illness, involuntary discharge of urine; her manner was hysterical and excited; and lastly, the heart's action, for days previous so feeble, had become jerking and forcible; pulse 112. No doubt could exist as to the diagnosis of cerebral congestion, and this was confirmed in the course of the day by the gradual supervention of paralysis of the right arm and hand. The head was shaved, and relays of leeches were applied to the mastoid process (at first four, afterwards three); a large blister was applied to the occiput, and gray powder and James' powder given three times a day, mercurial inunction being at the same time used. No improvement appeared until the twenty-third day, when the gums became slightly touched. The mercurial action was immediately followed by a change in the appearance of the face and manner, by the respiration becoming easy, and falling to 20–24 in the minute; by the pulse falling at once to 84; and the heart's action becoming tranquil; and by the loss of soreness of the surface. The paralysis of the arm and hand, however, remained, and only disappeared very gradually, so that some months elapsed before she could resume her professional avocations as a teacher of music.

In this patient, as in several others, I remarked that, for a considerable period after recovery, attacks of cerebral congestion, indicated by headach, flushing, brightness of the eyes, &c., were induced by any mental exertion or emotion.

I attended a gentleman in the year 1851, whose illness commenced early in September, and who did not regain a perfectly healthy condition of brain during the rest of the year: headach, flushing of the face and brow, sleeplessness, and irritability of temper invariably following upon mental excitement or fatigue, or the taking a single glass of wine. This gentleman's fever came on after continued excitement of mind and bodily fatigue, combined with prolonged exposure to the sun during a hot season. For several days before the symptoms of fever (of a typhoid type) appeared, he complained of great weight, tightness, and pain in the occipital region, with intolerance of light, and especially of sound; the heart's action was distressingly forcible and jerking, and could only be moderated by repeated application of leeches behind the ears. After the fever had terminated, the recurrence of the same cerebral symptoms again required repeated leeching, and the influence of mercury, to subdue them. The recovery, however, though very slow, was complete, and the patient has ever since enjoyed excellent health.

There can be no doubt that the future health and sanity of the patient in the inflammatory cerebral complication, more especially in those whose cerebration has been previously active, will often depend, in a great measure, upon the treatment pursued at and after the period of crisis: chronic arachnitis and softening, mania, and paralysis, being the consequences of maltreatment and neglect. I lately witnessed the later stages and fatal termination of a case which commenced more than eighteen months previously, in which I had every reason to believe that, had the inflammatory complication been recognised, a valuable life might have been preserved. In this gentleman the apparent exciting cause was exposure to the noonday sun while reading on a hot summer's day. The illness commenced with headach, green vomiting, and other symptoms of arachnitis, assuming subsequently the characters of gastric or typhoid fever, and being treated as such without reference to the cerebral affection. After convalescence from fever the headach remained, and imperfect hemiplegia supervened, followed by epileptiform convulsions, then partial blindness, and finally by an apoplectic seizure, which proved fatal in about an hour from its commencement. In this case no treatment was directed to the brain either during or immediately subsequent to the fever.

The second case of difficulty in diagnosis, to which I have alluded, is that in which symptoms simulating those of inflammation, but really due to exhaustion, occur at an advanced period of fever. I know of no signs which may be uniformly and constantly relied on for the diagnosis of this condition. It is true, that the face is frequently pallid, the eye clear, and the pupil dilated, but sometimes the face is dusky, the eye suffused, and the pupil contracted, and this is likely to be the case if the patient has passed many hours without sleep; the heat of the surface is often low, and the skin mottled, as if from cold, but sometimes the skin is warm and perspiring; the voice sometimes falls to a whisper, sometimes it is loud, and the delirium remarkably noisy; the head is frequently cold, but sometimes hot; the urine is frequently copious and limpid, sometimes the contrary; lastly, the heart may be feeble, or may present a jerking action with whip-sound, which it is far from easy to distinguish from the sound and impulse of cerebral irritation, more especially if, as often occurs, exhaustion coexists with the latter state.

It is from the history of the case, and the treatment previously pursued, our diagnosis must be chiefly derived; and if we meet with these symptoms in a case in which a depleting treatment has been pursued from day to day during the earlier periods of fever, we are not likely to err in ascribing them to exhaustion, rather than to active congestion of the brain.

The following case, slightly condensed from Dr. Ormerod's work on Fever[a], is so illustrative of this form of nervous complication, and its frequent cause, depletion, that it needs no apology for its introduction here, nor any comment of mine to enforce the lesson it teaches:—

The case is entitled, "Fever with papular rash; affection of the brain; symptoms relieved; death by exhaustion."

The patient was a previously healthy, temperate man, admitted into hospital on the seventh day of fever. He had taken purgative medicine previous to his admission. His face was pale and anxious; eyes glassy; head hot and perspiring; feet cold; tongue moist and furred; pulse 74, small and soft; bowels freely open from medicine; urine free and high-coloured; skin moist, with a papular rash about the chest and abdomen; pain in the head much increased by cough.

Eighth day. No sleep from cough and headach; face flushed and perspiring; eyes suffused and glassy; skin hot and moist; pulse 92; tongue thickly coated with white fur; cough, and rusty expectoration.

Ordered to be cupped to six ounces from between the scapulæ; to take two grains of calomel to-night, and half an ounce of castor-oil to-morrow morning.

Ninth day. The cupping gave immediate relief; cough and headach are much less severe, but he was wakeful and restless during the night; his face is flushed and hot; tongue dry and furred; pulse 98, with more power; three copious evacuations from the bowels.

Ordered to have the head shaved, and to be cupped to four ounces from the temples; to take two grains and a half of mercury with chalk thrice a day, and a saline draught with camphor mixture every six hours.

Tenth day. Restless, with incessant pain shooting from the forehead to the temples and occiput; pulse 108, small; face hot, flushed, and anxious.

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[a] Clinical Illustrations, p. 48.

Ordered to be cupped to six ounces from the temples; to take half an ounce of castor-oil immediately, and to continue the medicine.

Eleventh day. Head hot; face flushed; skin hot and dry; tongue dry and furred; pulse 110, small; three copious, liquid, ochrey evacuations from the bowels; he breathes hurriedly and with difficulty, but auscultation detects nothing more than slightly prolonged expiration.

Ordered ten leeches to the forehead; to take a little more nourishment, and to continue the medicine.

Twelfth day. Delirious; restless; two loose, ochrey evacuations from the bowels; abdomen tender; pulse 120, small and soft.

To continue.

Thirteenth day. Two scanty liquid evacuations; pulse 120, small and soft.

Fourteenth day. Lies on his back, unconscious, breathing with difficulty; unable to protrude the tongue; stares wildly at any one who addresses him, but does not move a feature, and returns no answer.

Ordered to be cupped to six ounces from the temples immediately; to continue.

Fifteenth day. He lay in the same way for two hours after being cupped, then, soon after, bursting into a profuse perspiration, he recognised and spoke to his father; had some sleep during the night, and is now quiet and free from pain; pulse 98, small and soft.

Ordered to have six ounces of wine and more beef-tea; to continue the saline draughts, and cold lotion to the forehead.

Sixteenth day. Noisy and restless during the night; when visited, trembling and hardly sensible.

Ordered a blister to the nucha, and a common enema.

In the evening he was lying on his back, perspiring profusely, trembling, and muscular rigidity; dysphagia; perspired all night, and died at 6 A.M. of the seventeenth day.

Post-mortem Examination.—The brain and membranes were in all respects natural, only there was a little old thickening of the arachnoid, and no more than the ordinary quantity of fluid in the meshes of the pia mater; the lungs were slightly gorged with blood; the heart healthy, containing fluid blood, &c. &c.

Well may Dr. Ormerod say:—"If we looked to morbid anatomy only as a guide to future treatment, there would be a decided condemnation of all the depletive treatment here adopted." We cannot, however, agree with him, that it appears to have been justified by the symptoms; in fact, a case which appears to have been mild and uncomplicated was rendered fatal, in all probability, by the unsparing use of bloodletting and purging. Cases will, however, occasionally, though very rarely, present themselves, in which, after symptoms of exhaustion requiring stimulants, those of reactive irritation will occur (usually at or immediately after crisis), demanding a return to the depleting plan of treatment. The following is a short abstract of my notes of a case of this description:—

Mary B., aged 19, robust, with short, thick neck, dark, flushed face, muddy, languid expression of eyes, much maculated, was admitted into hospital, under my care, on the ninth day of fever. On the tenth she complained of intense pain in the forehead; the skin was hot and dry; conjunctivæ injected; heart's impulse strong; pulse 96, and full; breathing markedly cerebral, with sense of oppression at the chest.

Bled to six ounces.

The headach and cerebral breathing were much relieved by the bleeding, but gradually returned, and on the thirteenth and fourteenth she had several fits of screaming, but in the meantime she had been several times purged (without medicine), the eye had become clear and glassy, and the heart's impulse and pulse at the wrist were feeble.

She was ordered four ounces of wine and a cardiac mixture.

The diarrhœa abated, and she became quiet during the next two days, but on the seventeenth day she had again violent screaming, with muttering delirium; eyes suffused and turned upwards; heart's action feeble, with small, rapid pulse.

She was ordered ten-grain doses of musk, with three grains of camphor, with wine, and gradually amended during the following three days; crisis occurring between the twentieth and twenty-first days.

On the twenty-second she had a marked rigor, followed by alternate chills and flushing, and by the return of the pain in the forehead, suffused eye, &c.; the pulse rose to 100, and the tongue became loaded.

Four leeches were now applied behind the ear; and a powder containing one grain of calomel, two grains of James' powder, and five grains of nitre, ordered to be given every three hours.

On the twenty-fourth she had several green stools, and the calomel was discontinued, the cerebral symptoms being much improved. The antimony and nitre were continued.

On the twenty-sixth day she was reported convalescent.

I believe this to have been an example of reactive inflammatory irritation, which would have been most certainly aggravated by stimulants, and would not have yielded with the same facility to any mode of treatment but that which was adopted.

The influence of previous states of cerebration is especially apt to be observed in those cases in which the patient, at the access of fever, labours under some deep depressing emotion, be it fear, shame, grief, or anxiety. Dr. Cheyne's brief but graphic sketch of such is well known[a]; and a most illustrative example of the effect of fright is given by Dr. G. Kennedy, in one of his admirable Reports of the Cork-street Fever Hospital. In accordance with the law, that the portion of the organism undergoing disintegration is specially subject to the operation of a morbid poison (as demonstrated by Paget[b] and W. Budd[c]), the emotional centres are in such cases the portion of the nervous system whose functions manifest peculiar derangement. The intellect is often little affected, the patient retaining his volitional control over his thoughts, but not over his motor actions. If delirious, he raves on the subject of his previous emotion, or perhaps manifests general depression of spirits, and a hysterical tendency. I presume that it is to this class we should refer the pseudo-hysterical cases which Cheyne[d], and after him Graves, have mentioned, under the name of dangerous, hysterical complications of fever, of which Dr. Graves says:—"In every case of fever where symptoms resembling those of hysteria come on, you should be apprehensive of danger. I do not recollect having met with a single instance of this kind which did not terminate in nervous symptoms of the most formidable nature." No doubt, a form of blood-contamination, to be hereafter noticed, exists in many such cases; but in others the character of the nervous symptoms is determined by the previous emotion. These cases are marked by the greatest disturbance of the respiration, by the low temperature of the surface, by the early and general subsultus and tremor, especially of the facial muscles; by dysphagia, and by the early loss of the sensational consciousness.

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[a] In Sir Henry Marsh's Essay on the Origin of Fever: Dublin Hospital Reports, vol. iv.

[b] Lectures on Nutrition, Medical Gazette, vol. xxxix.

[c] On Symmetrical Diseases, Medico-Chirurgical Transactions, vol. xxv.

[d] Cyclopædia of Practical Medicine, vol. ii. p. 217.

No better case, for the purpose of illustration, could be cited, than the following by Hippocrates[a] :—

"In Thasus, the wife of Dealces, who was lodged upon the Plain, was seized, from sorrow, with an acute fever, attended with chills. From first to last she wrapped herself up in her bedclothes; still silent, she fumbled, picked, bored, and gathered hairs from them; tears, and again laughter; no sleep; bowels irritable, but passed nothing; when directed, drank a little; urine thin and scanty; to the touch of the hand the fever was slight; coldness of the extremities. On the ninth, talked much, incoherently, and again became composed and silent. On the fourteenth, breathing rare, large at intervals, and again hurried respiration. On the sixteenth, looseness of the bowels from a stimulant glyster; afterwards she passed her drink, nor could retain anything, for she was completely insensible; skin parched and tense. On the twentieth, much talk, and again became composed; loss of speech; respiration hurried. On the twenty-first she died."

Some years since I witnessed and took notes of a very striking example of this form of nervous lesion, due to the influence of depressing emotion. My patient was a member of the profession, between fifty-five and sixty years of age, enjoying a large practice, wealthy, beloved by his family, but unhappily of a peculiarly nervous and sensitive temperament. Having to appear as a witness in a cause in which he had taken a more zealous interest than was prudent, he was subjected, for several hours, to a cross-examination of the most painful description, by a barrister notorious for performances of the kind. He returned home broken down by shame and vexation. He could not sleep or eat; as much as possible he absented himself from the society of his family; and fever being then prevalent in the town in which he resided, he soon contracted the disease.

The symptoms of profound nervous depression appeared at once; he began to sink from the first day; and on the eighth day the stupor, difficulty of breathing, coldness of surface, and failure of the heart's action, were so marked that he was to all appearance moribund. He was, however, kept alive till the fifteenth by the free employment of stimulants, especially of wine and brandy, the sinking of the temperature continuing throughout, with most painfully laborious breathing and dysphagia, occasionally profound stupor and stertorous breathing, universal subsultus, tremor of the jaw, lips, and tongue, with paroxysms of tremulous rolling of the head, &c. Near the end of the second week, the skin, which had been yellow, inclining to bronze, improved in colour, and the maculæ faded, but the nervous lesions increased daily; hiccup became constant, the voice sank to a whisper, the tongue became retracted, the breath cold, he had involuntary discharges, a bed-sore formed, and he died at length completely exhausted. He had scarcely any delirium throughout the illness, but his expressions always indicated extreme despondency, and want of desire to live: thus, when offered wine, he usually refused it, saying:—"It is of no use; wine cannot work miracles." The nervous lesions seemed specially referable to the medulla oblongata, whose nerves were all profoundly affected; the sinking of temperature, disturbance of respiration, and dysphagia, were the most remarkable I have ever witnessed: the last was at times complete; flying blisters, sinapisms, &c., produced no effect on it, but I could usually remove it for the moment by dipping my fingers in water and smartly dashing the face, when he would swallow a few mouthfuls freely. He retained his mental consciousness to the last; and, though unable to speak, he showed that he knew me, by signs, a few moments before he died.

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[a] Sydenham Society's Edition, vol. i. p. 419,

The secondary blood-contaminations more usually associated with nervous derangements in fever are such as arise from the presence in that fluid of the products of increased metamorphosis of tissue, of resorbed sanguineous congestions, or of pus, and of suppressed or retained excreta. Practitioners have long been aware of the peculiar nervous symptoms which characterize fever in the over-fed and luxurious; in those in whom the access of the disease coincided with excessive mental or bodily exertion, and consequent rapid disintegration of tissue, or with extensive pulmonary congestion (the fierce delirium of pneumonia, complicating typhus, has been often noticed). The female whose menstruation has been arrested by the exciting cause of fever—whether cold, or a mental shock—usually displays serious blood lesions, associated with nervous symptoms of an emotional or hysterical character, such as Cheyne, and after him Graves, state to have been almost uniformly fatal in their experience. There is much reason to believe that the nervous derangements in the later stages of typhoid fever are sometimes due to secondary blood-contamination consequent upon absorption from ill-conditioned intestinal ulcers[a]; while numerous instances are recorded by various writers, of delirium, coma, and convulsions, in the complication of fever with jaundice, the nervous symptoms being attributed to resorption or suppression of bile. Lastly, cases of retained urea present peculiar characters, which were recognised by some of our older writers[b], though not ascribed to their true cause until since the researches of Bright, Rayer, Christison, and others.

Several causes usually concur to produce the presence in the blood in excess of the products of regressive metamorphosis. Indulgence in animal food and vinous or spirituous liquors; muscular exercise during the latent period of fever; exposure to cold at the same period; and the increased disintegration of tissue which occurs in all fevers, without proportionate increase of elimination[c], are among the most influential. The well-known effect of a highly animalized diet, in producing or increasing a tendency to epilepsy, is an illustration of the special affinity of these products for the excito-motor centres of the brain and spinal axis: we have another in the existence of the same affinity in the case of retained urea, itself a product of disintegration. The tendency to peculiar nervous lesions in the wealthy and well-fed has long been observed: thus, Sims[d] gives a graphic description of them as prevailing in his time "among the middle ranks of the people, who use much flesh in their diet, and whose prevailing foible is an indulgence in spirituous liquors." And I cannot better detail the symptoms, as they have been usually observed, than in Dr. Cheyne's sketch of a form of fever frequently met with in the upper ranks of society during the epidemic of 1817[e]. "Persons in this class of society, more especially if they had passed their thirtieth year, who had been accustomed to live fully and luxuriously, were liable to a fatal form of the disease, which, to the inexperienced, was often very deceptive: the intellect was clear; the manner rather hurried, but otherwise natural; the patients declared themselves without pain or uneasiness; unless what arose from great weakness, which they were astonished at, so little seemed to themselves to ail them; and this at a time when their skin felt greasy, and was covered with dun petechiæ, when their eyes were glassy, their countenance somewhat suffused, and their breathing quick. *Such patients were very liable to convulsions*, in which case death (which in the upper ranks frequently took place on the eleventh day) was seldom distant," &c. In my own experience, languid and irregular circulation, laborious breathing, low temperature, tremulousness of the muscles, stupor, and convulsions, have characterized this group of cases; they also, like the preceding group, present the most remarkable lesions of the sensational consciousness.

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[a] See Dr. M'Dowel's interesting case in the Dublin Hospital Gazette for March 1, 1857.

[b] "Sometimes," says Armstrong, "acute inflammation of the brain is to be recognised by a glary, bloodshot eye, a contracted pupil, an agitated expression of the countenance, and a peculiar species of moaning, which scarcely ever ceases for a moment; and to these indications confusion of mind, tremors of the muscles, and coma rapidly succeed, and the patient expires at last with a bloated, pale face, and laborious breathing." These are the symptoms, not of acute inflammation, but of uremic poisoning of the brain.

[c] There is reason to believe that this is an influential cause of the uremic poisoning so frequently observed in the short relapsing fever of Scotland by Cormack, Wardell, Henderson, and others. See Remarks on Urea in the Blood, by Mr. M. T. Taylor, Scottish and North of England Medical Gazette, vol. i. p. 292.

[d] On Fevers.

[e] Barker and Cheyne's Report, vol. i. p. 484.

Of the secondary blood-contaminations giving rise to nervous lesions in fever, uremia may be selected for illustration as one of the most remarkable, and in many respects typical of the others. This contamination may originate in various ways, as, first, by prolonged retention merely. In several examples in which retention was so prolonged as to lead to dribbling of urine, and subsequently to inflammation of the mucous membrane of the bladder, uremic convulsions occurred, which ceased upon the urine being drawn off by the catheter, and copious diuresis induced[a]. As Dr. Todd has shown that cerebral symptoms not unfrequently occur from retention in those affected with enlargement of the prostate[b], it is not to be wondered at that they should sometimes supervene in fever from this cause. But secondly, less complete or prolonged retention will be followed by the same result, when this is associated with either chronic nephritis or acute congestion of the kidney. In such cases Rayer[c] seems inclined to attribute the nephritis to the retention. "In most cases of typhoid fever," he observes, "in which there was affection of the kidneys, the patients were prostrated, after one or more days, by stupor; the bladder distended, formed a tumour in the hypogastric region, and the urine was retained, or dribbled from an overflow. The conditions of the patients did not suffer them to make a spontaneous complaint of pain in the region of the kidneys; and the nephritis was diagnosed, during life, by the alkaline state of the urine, the presence of mucous or sometimes of blood globules, and that of albumen, in this liquid. . . . The practitioner should be aware of the possibility and of the gravity of this complication, and of the danger which in this respect attends retention of urine, and of the necessity not to allow urine to accumulate in the bladder; because nephritis, once developed, determines or hastens the death of the patient."

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[a] See a remarkable case by Dr. Corrigan, Lectures on Fever, page 42; and another by Dr. Brinton, Lancet, December, 1853.

[b] London Medical Gazette, vol. xlv.

[c] Maladies des Reins, tom. ii. p. 204.

Whether this view of the connexion between retention and nephritis be correct or not, there can be no doubt that the occurrence of the latter is often due to other causes. Two I may mention, of which I have seen several examples:—1. Suppression of perspiration, by cold applied to the surface, particularly of the back, previous to fever. In two instances in which cold thus applied was the exciting cause of fever, there was complete suppression of urine, with discharge of blood from the kidneys in small quantity, and the well-known cerebral symptoms of such suppression. 2. Excessive catharsis, more especially from saline purgatives. I have reason to believe this practice to be a frequent cause of the presence of albuminuria and renal congestion in typhus, and one of the many causes which frequently act conjointly in producing cerebral symptoms[a].

But there can be little doubt that the most frequent cause of uremia in fever is the previous existence of chronic nephritis. Experience proves, that patients suffering from Bright's disease may go on for months enjoying tolerable health, if the blood is from time to time relieved by some evacuation (such as vomiting) by which urea is eliminated; but such eliminative actions being checked by fever, symptoms of blood-poisoning manifest themselves, commingled with those of fever in such a manner as often to make an accurate diagnosis difficult, of the exact share of each in the production of the group. Such cases are described by Fenger, under the name of masked forms of Bright's disease; and such I would regard Dr. Smith's interesting case of hematuria and suppression of urine, in the last Number of this Journal.

The extent to which this uremic poisoning of the blood

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[a] An interesting example of the connexion between hypercatharsis and albuminuria occurred in the case of two brothers whom I saw in the Meath Hospital, in March, 1856: they were nearly of the same age, and had both the same type of fever, running, in fact, a course precisely parallel, with the exception that one, who had been severely purged by salts before admission, presented a marked amount of albumen in the urine for four days; the other, who had not been purged, presented none.

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will affect the nervous centres in fever depends much upon other causes influencing both the nutrition of the brain and the condition of the circulating fluid. In this respect the fever patient resembles the puerperal female, in whose blood urea may exist in large quantity without producing convulsions, provided this fluid be otherwise healthy, and the brain free from congestion.

The first effects of the poisonous action seem to be felt by the spinal axis, as evidenced in the remarkable tremor and subsultus; but it also manifests its action on the cerebrum, producing peculiar psychological phenomena. The patient seems to preserve his intelligence, but becomes peevish, dispirited, and fretful; he is drowsy at times, but not equally so at all times, and before the stupor becomes profound he awakes from his doze suddenly, and with a start or appearance of affright; when addressed he seldom looks at the physician, and answers the questions addressed to him with his head averted, and with a dreamy, careless, or sullen manner, as if looking at and thinking of something else; sometimes he is mute, or perhaps, instead of replying, he mutters as if in conversation with another person. "Silentium ad interrogata, sermonicatio cum absente." I have often questioned these patients as to the cause of their peculiar and characteristic moaning, but I never could obtain an answer from any of them[a]. The eye is usually red, as if from want of sleep; and the pupil, previous to the occurrence of coma or convulsion, is contracted, as if from opium. The face and forehead usually present a flush of a brick or copper-red colour, diffused and permanent; in some cases, however, it inclines to purple; and in patients affected with chronic renal disease, the face is occasionally pale and bloated. As the disease advances, if we watch the patient for a few moments we observe the eyelids close, and the eyeballs roll convulsively under them; at the same time a spasm passes rapidly over the face, causing an expression of pain, and he utters a low, plaintive moan; the facial convulsion becomes gradually more marked, and may be excited by a blast of cold air, or by touching the lips in some cases. Another characteristic sign of this complication is, the muscular tremor affecting every part of the body and extremities: this is painfully evident when the patient (usually obstinate) insists on being raised in the bed to take a drink from his own hand; sometimes there is squinting, sometimes a droop in one eyelid, occasionally double vision. After a few hours the muttering subsides into stupor, from which the patient can for a time be aroused by speaking loudly,—exactly as in narcotism from opium,—but which passes gradually into coma, with nasal stertor; very generally he awakes from this state, and becomes noisy and unmanageable; to this delirium convulsions soon succeed, followed either by coma or a second convulsion,—occasionally, but not often, by a return of consciousness,—and death.

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[a] Dr. Cranfield makes the same remark in the case of patients in the secondary fever of cholera:—"Those that died moaned almost continually, and when questioned as to the cause of it, they could not assign any. They became comatose, and fell into collapse."—*Practical Treatise on Cholera*, p. 138.

Dr. Walshe also describes a manner closely resembling that which I have noticed in many cases of uremia, as occurring in tubercular meningitis. He says: "I have now observed at least six cases of this affection in the adult, in which a peculiar form of mutism formed a striking symptom. The patients, when questioned, looked steadily in the speaker's face for a few moments, and then, without making the slightest effort at speech, deliberately, but without any sign of petulance, turned their heads away."—*On Diseases of the Lungs and Heart*, p. 392.

The course of the symptoms will sometimes differ from the above, according to age, constitution, and different complications: thus, in the old and enfeebled subject, lethargy and coma will supervene quickly, so as to take the place of other symptoms; and in those who labour under a more acute form of kidney complication, vomiting and bloody urine will be superadded. In most of the cases which I have seen, vomiting occurred once towards the close; a sudden, copious vomiting, like that sometimes seen after narcotism.

The following abridged histories will serve to illustrate the course of the symptoms of this peculiar complication:—

A gentleman, aged 45, of full habit and purplish complexion, with marked arcus senilis, was much exposed, at the period of the invasion of fever, and for two or three days subsequently, to cold, and to severe bodily and mental exertion. His habits of living had been previously luxurious, and he was daily accustomed to drink a large quantity of wine.

The fever came on gradually, and I was not consulted till the eleventh day, the patient even then obstinately refusing to see any physician. I found him propped up in bed, with a wild, angry expression of countenance, but with perfect intelligence, breathing rapidly and with effort, as if after strong muscular exertion; his face was not flushed, but bloated, dusky, and haggard; the lips and ears livid; the eyes suffused; the lower jaw and lips agitated by constant tremor; the tongue dry, and tremulous when protruded; the surface of the trunk and extremities was cold,—the latter particularly so,—mottled, and slightly livid; a few dark maculæ were scattered over the abdomen, which was tumid and tympanitic; there was moderate diarrhœa, of an ochrey character; the heart's action was weak; the pulse small, weak, and rapid, and most irregular, its rhythm being entirely lost.

There was no change in the symptoms till the thirteenth day, when the facial convulsions and peculiar moaning I have described set in, and recurred frequently in the course of the forenoon, followed at 2 P.M. by a severe and prolonged epileptiform convulsion, after which, for twelve hours, neither spasms nor moaning returned. The urine, on examination, was found to be smoky in appearance, and coagulable on the application of heat.

In the course of the evening he had frequent fits of loud yawning; and at midnight, while I was giving him a spoonful of wine, he suddenly vomited a large quantity of fluid.

Early on the morning of the fourteenth day the moaning and facial spasms returned, the latter being excited by putting a teaspoonful of fluid to the lips; then occasional stupor, merging in coma; and about 1 P.M. a second and fatal convulsive paroxysm.

A gentleman, aged 35, of very active habits, robust, and supposed to be previously quite healthy, was attacked by severe and continued vomiting, and pain in the stomach, after eating mushrooms: to the vomiting succeeded obstinate constipation, headach, and symptoms of fever. I saw him, in consultation, about the ninth day, when he had the appearance of a patient in maculated typhus; the intelligence, however, was undisturbed. The symptoms which mostly attracted my attention, during the thirty-six hours that he survived after my first visit, were,—the peculiar brick-red suffusion of the face and brow; the intensely red eye and contracted pupil; and, from the eve of the day of his death, the remarkable tremor of all the muscles, and the occurrence, every ten or fifteen minutes, of facial spasms, attended with a low, tremulous moaning, for which he would assign no cause. The urine was not deficient in quantity, but was perfectly devoid of urinous smell, and was of the colour of porter, depositing nearly a fourth of its volume of blood corpuscles, the supernatant fluid coagulating upon the application of heat.

On the evening of the day following he had a severe fit of convulsions, followed by an interval of perfect consciousness, and, after an hour, by a second and fatal convulsion.

Some time since I witnessed a fatal case of this complication in the Meath Hospital, under the care of my friend, Dr. Lees, and since published by him. The patient was a gentleman's coachman, well fed and corpulent. He was admitted into hospital on the tenth day of typhus, having been previously well purged by salts. During the next three days the intelligence was but little affected, but on the thirteenth day delirium increased, as did subsultus, and he had general tremor, with twitching of the facial muscles; pupils became contracted, but without any marked suffusion of the eyes; the pulse at this time was 80, soft and regular, and the action of the heart natural.

About 6 on the morning of the fourteenth day he had a fit of an epileptic character, accompanied with jerking tremor and tonic spasm of the arms, and twitching of the face. At 8½ A.M. his face and forehead were red and congested; eyes suffused; pupils contracted; respiration laborious, with heavy moaning; he put out his tongue when desired to do so, but did not answer questions; no urine having been passed during the night, about a pint was drawn off by the catheter, it was dark-coloured and ammoniacal.

About noon he had another convulsion; and at 3 P.M. another, which continued, with little intermission, until 4½ o'clock, when he died.

On examination, seventeen hours after death, the lungs were found congested with dark fluid blood; the heart flaccid; the right cavities empty, the left filled with dark fluid blood; no organic disease or change of tissue in its substance; all the large veins of the abdomen were distended with fluid blood; the kidneys greatly congested; the cortical and pyramidal structure less distinctly separated than in the heathy state, but when submitted to the microscope, little abnormal could be detected, except a few oil globules and exudation corpuscles dispersed at considerable intervals over the field, and great congestion of the corpora Malpighiana. The bladder contained about one ounce of turbid urine, though none had been passed since it was drawn off by Mr. Egan, so that only one ounce of urine had been secreted during seven hours previous to his death. There was great congestion of the membranes of the brain, and also of its substance. Mr. Thomas Hayden examined these parts under the microscope, and reported that the vessels of the pia mater were greatly congested, but no exudation matter or inflammation corpuscles could be detected. Mr. C. H. Leet detected an appreciable quantity of urea in the blood, and in the serum of the ventricles, but scarcely a trace of it in the urine, which contained a large excess of alkaline phosphates and much albumen (62·5 per cent. of the solid residue)[a].

[a] Dublin Hospital Gazette, vol. iii.

Several examples of this form of cerebral complication, occurring in patients previously affected with Bright's disease, are given in Dr. Ormerod's Clinical Illustrations of Fever[a], to which I must be content to refer. The following case I extract from Dr. Christison's work on Granular Disease of the Kidney, as illustrating the influence of this lesion on the production of cerebral symptoms, and the apparent effect of morphia in aggravating these. I have more than once observed that in fever, as in cholera, the symptoms of uremic poisoning are strikingly aggravated by opium.

A night-watchman, of regular habits, aged 32, about four years previous to his attack of fever, had suffered some form of urinary complaint, and had since been liable to frequent micturition, and at times retention, and also to hematuria. His fever commenced with nausea, vomiting, general pains—especially in the loins—headach, giddiness, and singing in the ears. On the fifth day he had frequent calls, with much inability to pass urine, and on the seventh complete retention. On the evening of the seventh day sixteen ounces of urine were withdrawn by the catheter, and on the following evening twelve ounces. "On the ninth he complained of great weakness, general soreness, frequent greenish vomiting; the face was brownish, flushed, oppressed, and characteristically febrile. The pulse 100, and feeble; skin warm, and covered with pale, irregular, diffuse petechiæ; tongue dry and furred; bowels constipated. His answers were clear and intelligent, but he had muttering delirium and subsultus tendinum. He was ordered a laxative solution, and a little wine, cautiously, with a morphia draught at night; eight ounces of urine were withdrawn by the catheter, but not preserved for examination. He passed a restless night, and on the morning of the tenth day he was incoherent, torpid, less easily roused, and affected with frequent twitchings of the face. The pulse was 120, and weaker; the tongue covered with sordes; deglutition difficult; the face flushed, and the eyes injected." Soon after the visit "he was suddenly attacked with violent convulsions of the whole body, attended with deep, imperturbable coma, squinting of the eyes, a full, strongly jarring pulse, and powerful action of the heart." Three ounces of urine were withdrawn by the catheter; specific gravity, 1014, strongly coagulable by heat. The coma continued profound, with occasional spasmodic tremor and contractions of the limbs; and death took place only two hours after the appearance of convulsions."

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[a] See especially Cases III. and XXIX.

On examination, the only organs presenting any abnormal appearances were the kidneys. Both were very large, elongated, one-third at least beyond their average length, and very flabby. The cortical portion presented much greater breadth than usual, its fibrous structure was very obscure everywhere, and in most parts obliterated—generally darker than natural—exuding a good deal of blood from a fresh cut surface, and presenting a remarkable mottled appearance, composed of the ordinary brown cortical, but chequered uniformly with small, brighter, brownish-red, or blood-red points." Two ounces of fluid blood were cautiously removed from the heart, in which, upon examination, an appreciable quantity of urea was discovered.

"I have several times found," says Dr. Christison, "the blood loaded to a much greater degree with urea than in the present case, without any tendency to coma being manifested; and a greater amount of diminution of the urine not unfrequently occurs without the functions of the brain seeming, for some time, to suffer. But in this instance the brain and nervous system had also to encounter the oppression arising from the typhoid form of continued fever." He concludes his remarks with this important statement:—"Every instance of death from sudden convulsions in fever, which has of late occurred in the Edinburgh Infirmary, and underwent proper investigation, has proved to have been connected with an albuminous state of the urine, and with organic disorder of the kidneys."

The period of crisis is sometimes marked by peculiar nervous symptoms. Not only have we at this stage the recurrence of the symptoms of early inflammation, or the manifest appearance of that which was previously masked by adynamia, but, independent of these, we also often see nervous symptoms occur as modes of crisis, and as consequences of imperfect crisis. The first are met with chiefly in the young and in females. In women whose menstrual period corresponded with the commencement of fever, hysterical symptoms, sometimes hysterical convulsions, are apt to occur on the eve of crisis[a]. In the young, a fit of convulsions is not uncommon even when no cerebral symptoms have marked the earlier period of the fever beyond perhaps a more than usual amount of headach. I saw a case of this kind during the present year in a boy aged 14, who complained of headach, without suffusion of the eyes, or any other symptom of cerebral inflammation; toward the termination of the fever a degree of stupor came on; after this had continued about a day, he had a severe convulsive paroxysm, followed by a return of stupor, which continued for two days, and was followed by a second attack of convulsions; after which he recovered without any further bad symptom. I ascertained that this boy had never had epilepsy previously. The urine at the time of the fit was copious and limpid, like the urine of hysteria.

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[a] This has been noticed by Dr. H. Kennedy in the fortieth Number of this Journal.

A very similar case is given in Henderson and Reid's Report of the Fever of Edinburgh, in which a single paroxysm was followed by immediate recovery. In some of these cases the cerebral circulation seems to become much deranged for the first time on the eve of crisis: this appeared to be the case in a girl aged 19, who was admitted into hospital under my own care on the eighth day of fever, and had no cerebral symptoms until the fourteenth, when she was suddenly seized with convulsions, which continued for fifteen minutes, and recurred after five hours, the last fit being followed by much stupor, pain in the head, and distortion of the mouth. The evident cerebral congestion was treated by cupping the neck, calomel, and small doses of tartar emetic. On the next day the patient was free from fever, and her subsequent recovery was rapid; the facial paralysis continuing for several days, and disappearing gradually. But in other instances the brain being predisposed by over-excitement, previous disease or injury, cerebral symptoms have set in early, and have undergone, *first exacerbation, and then resolution*, at the period of crisis. The following is an example.

A young woman was admitted into hospital under my care on the seventh day of maculated fever, having been for many months previous subject to frequent attacks of headach, ascribed to a severe injury from the fall of a heavy piece of timber upon the head.

The fever was ushered in with rigors and headach, followed by repeated vomiting, and on admission the face was flushed, the eyes dull and suffused, skin hot and dry, pulse 90 and full, heart's action violent, the tongue coated with a white adhesive fur; there was intense thirst, and ardor urinæ. Soon after admission she vomited about eight ounces of green fluid, and vomiting or retching recurred at intervals throughout the fever. On the thirteenth day, after more than usually severe retching, she complained of great increase of headach, with intolerance of light, the eyes being much suffused. Six leeches were now applied behind the ears, and the same number were twice afterwards applied. She was also ordered to take a grain of calomel every third hour. On the fifteenth day the report states she had not been relieved by the leeching; she had constant rolling of the head on the pillow; the head being hot, skin dry, tongue brown, urine scanty and high-coloured. A blister was applied to the nucha, and on the seventeenth day, there being no amendment, another to the occiput. On the evening of this day she had a convulsive seizure of a mixed character, and, after an interval of an hour, another. On the following day the cerebral symptoms were relieved, and she appeared free from fever, but had mercurial griping and slight ptyalism; her convalescence was rapid and complete. In this instance the convulsion seemed to be a critical effort, and salutary in its effect, reminding us of the aphorism of Broussais—"Every perturbation caused in the animal body, by either physical or moral agents, tends to terminate either by convulsive motions or by evacuations."

Occasionally the exacerbatio critica is marked by a sudden increase of delirium, subsultus, or tremor, the delirium being impulsive, the patient restless and agitated, jumping out of bed, leaving his room, striking his attendants, &c. After a time this agitation subsides; he lies down, and falls into a calm and prolonged sleep. Dr. Corrigan has pointed out that the nature of this nervous excitement may be recognised by the absence of coma, by the hysterical character of the agitation, and by the copious secretion of urine loaded with lithates. Occasionally some attention is required to distinguish the profound sleep which follows this delirium from coma: this, however, can always be done by noting the equable distribution of heat, the state of the pulse, of the respiration, of the pupils, and of the consciousness, which is perfect in the former, while it is lost in coma.

The nervous derangements which most frequently follow crisis, more especially if incomplete or imperfect, are, sleeplessness with delirium and tremor, and convulsions of an epileptic form or hysterical character. Sometimes we meet with the more serious affections of fatal convulsion or of paralysis as immediate consequences of crisis. The former are mentioned by Cheyne as having thus occurred in his own and in Dr. E. Percival's practice. Paralysis after fever is met with either in the form of true hemiplegia or paraplegia, or in that form of general paralysis described by Dr. H. Kennedy[a]. Some of his cases appear of a doubtful nature, deserving perhaps rather to be called debility than true paralysis, but the following may be quoted as an unquestionable example of paralysis from the poison of fever:—" A woman aged 44, was attacked by severe fever attended with petechiæ, and recovered from it but slowly. When the time came round that she might be supposed to exert herself, it was found that she had lost the power of moving both the upper and lower extremities; in fact, she was completely paralytic, and no means seemed to be of the slightest use. The arms presented exactly the appearance of limbs paralysed by lead. In truth, no one could see this patient without having the conviction forced on his mind that the shock of the fever had literally destroyed the nervous agency. The patient lived about one month in the state described, never having given any sign of rally whatever, and, it is particularly worthy of note, not even a threatening of stripping. The brain only was examined: it was particularly healthy; there was a a very small quantity of effusion into the ventricles, and a slight degree of venous congestion."

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[a] Dublin Medical Press, vol. xxix. p. 274.

Of the less serious nervous lesions following crisis, sleeplessness with delirium is frequent in those whose cerebration has been active previous to the fever, or too soon after its termination. One of the most obstinate cases of this kind which I ever witnessed was in the person of a gentleman of most studious habits, who after a favourable crisis passed sixty hours in delirium without sleep. He was at length quieted by repeated doses of muriate of morphia and tartar emetic. A similar and most interesting case is narrated by the writer of a review of Dr. Graves' Clinical Medicine, in the twenty-third volume of the Dublin Medical Journal, First Series. Several examples might be adduced of the occurrence of these symptoms from emotional excitement of various kinds during the early stage of convalescence.

Convulsions after crisis are usually of the hysterical, but sometimes of the epileptic kind, when there will be present some other evidence of deranged cerebral circulation or of spanemia. An interesting case of this nature came under my observation some years since in a lady who had passed through typhoid fever (caused by malaria) under the care of another medical practitioner. The patient, aged 45, was of an excitable, hysterical temperament and jealous disposition, her habit of body was full, and she lived well. The brain had not been apparently engaged during the fever, and she had therefore been allowed to retain a mass of hair at the back of her head, of which she was very vain. She had also taken wine, and had continued to do so after crisis, and up to the time of my visit.

I was consulted in consequence of the supervention of severe headach with some degree of stupor, and constant distressing vomiting and retching, followed after about a day by a regular epileptic fit, which was ushered in by the usual scream. The fit recurred after a few hours, and again at intervals during the two following days. The treatment employed consisted in withholding wine, cutting off the hair, applying cold to the head, and leeches behind the ears, and in the exhibition of grain-doses of calomel at short intervals. She had no fit after the leeching, and the vomiting ceased after the first or second dose of calomel. As is usual after fever, ptyalism was very rapidly induced, and all unfavourable symptoms disappeared. This lady had never had epilepsy previously, nor has she since suffered any return of it.

For the purpose of differential diagnosis, a brief recapitulation of the most frequent forms of cerebral complication, and their characteristic signs, may not be useless.

I mentioned at the commencement of these remarks that we sometimes find it not easy to discriminate between primary and secondary cerebro-meningeal inflammation. On this an able writer observes[a]:—"No greater difficulty of diagnosis can occur than that which is sometimes presented by a case in which the question arises, whether the symptoms are due to meningitis with fever of a low (or typhoid) type, or to typhoid fever with cerebro-meningeal complication. The question is not so much whether inflammation is or is not present (for it may exist in the latter), but whether that inflammation (or cerebro-meningeal condition) is primary or secondary; in other words, whether fever is the result or secondary product of the inflammation, or whether the inflammation is one of the many secondary phenomena of the fever." Dr. Reynolds justly observes that the difficulty is greater with regard to typhoid than to typhus fever; we may add, that the younger the patient, the greater the difficulty. We endeavour to arrive at this diagnosis:—1st. By ascertaining the cause, when this can be satisfactorily done; sometimes, however, the causes of both will be found to have occurred, as, for instance, exposure to malaria, and a blow on the head. 2nd. By the presence of the special symptoms of one or other condition, or by the absence of some essential characteristics of one or the other. Thus, if ochrey diarrhœa, with tenderness and gurgling over the cæcum, are present, more especially if rose spots and the bronchial affection of typhoid are superadded, the diagnosis of fever may be made with certainty; but if these or the two first be absent, and vomiting ushered in the attack, and continued for some days, arachnitis may be diagnosed with nearly equal certainty, and this conclusion will be strengthened if there is also persistent intolerance of light and sound, and increased cutaneous sensibility. Moreover, a close observation of the patient will detect a difference in the mode in which certain features are affected in the two states: for example, the eye in the typhoid patient is usually clear, and the pupil open and dilated; while in arachnitis the contrary occurs; this sign, however, is subject to too many exceptions to be much relied on, and the same may be said of the appearance of the tongue, &c. The diagnosis of an inflammatory condition of the brain supervening at a late period of fever is scarcely less difficult; it is to be recognised by late headach, tinnitus, and photophobia; minute injection of the conjunctiva of one or of both eyes, knitted brow, permanent flushing of a purplish hue, watchfulness with or without stupor, impulsive delirium, rigidity and retraction of the neck and limbs, and increased sensibility of the surface; the heart, previously weak, becoming excited, and its action quickened, more especially under the influence of wine.

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[a] Reynolds on the Diagnosis of Diseases of the Brain.

The cerebral complication arising from a previously exhausted state of the nervous centres, as from depressing emotion, is marked by all the signs of deficient reaction and diminished nervous energy; while the combination of fever, with secondary blood-contaminations, presents marked derangements of the respiration, circulation, and temperature, with alterations of the aspect and colour varying according to the source of the contaminations, purple and bloated in bronchial and cardiac congestion, becoming often suddenly icteroid in pneumonic and in splenic, truly jaundiced in hepatic complications, while the uremic form of contamination usually presents a persistent brick-red or copper-red flush, diffused equally over face and brow, with suffused, ferrety eye, averted look, and sullen manner of answering, or mutism; peculiar tremulousness, facial spasms, and general convulsions, alternating perhaps with stupor and coma.

Lastly, the nervous derangements of crisis may be known by the period of their occurrence (during the perturbatio critica); by their hysterical character; and in more serious cases, after crisis, by their occurring in patients whose brain has been overworked previous to the fever, in which case the symptoms are usually those of exhaustion or reactive irritation of this organ.

Cerebral symptoms have a double relation to prognosis in fever: first, as special signs indicating lesions more or less serious, of the great nervous centres; and, secondly, with respect to the fever as bearing on the question of general prognosis.

Of the first it is to be remarked that different nervous symptoms have a different value; thus, delirium can scarcely be considered of value as a special prognostic sign, because we do not find it associated with any definite condition of the great centres, as well as because we meet it alike in favourable and unfavourable cases; while spasmodic rigidity of muscles has a high value as a definite sign of cerebral inflammatory irritation; and lesions of sensational consciousness and of the emotions are important, as indicating a serious affection of the great centres which are especially connected with the automatic motions so essential to life.

But cerebral symptoms have also an important bearing upon the prognosis of fever generally; for example, the nature and amount of *predisposition* has often the utmost influence upon the prognosis, and we all know how much the former depends upon the state of the nervous system previous to and at the time of seizure, this being such as also predisposes to the most severe nervous lesions. Thus, if called to see a case of fever on the first or second day, we find the patient sleepless, and in high delirium, and learn that, previous to the attack of fever, he had been suffering great mental excitement,—more especially emotional,—we augur badly of the result from this sign, if from no other. Again, these symptoms are sometimes a measure of the intensity of the fever poison, especially of that form which kills rapidly and which is marked by early stupor, prostration amounting to immobility, loss of power to swallow, laborious breathing, and sinking of the temperature; they also indicate a deficient power of resistance and imperfect reaction in the organism, which is of the worst possible augury, occurring, for the most part, in those who have previously suffered the influence of some depressing emotion, or the exhaustion consequent upon long-continued mental excitement or bodily fatigue,—instances of which are too common in anxious parents, professional men, and those engaged in speculative business, to need any illustration.

Lastly, the signs of impending death are also indications of the loss or severe lesion of all the functions of the great nervous centres. The hopelessness of the case is revealed in the total loss of volition, motion, and sensation, and of the consciousness; and in the laboured, faltering, and irregular performance of the automatic movements, which alone remain to show that life is not yet extinct.

The object of this paper being the consideration of cerebral complications with reference to diagnosis chiefly, I shall offer but a very few remarks on their treatment. This may be said to be involved in the proper treatment of fever generally, the principal indications being the following:—

I. To relieve cerebral congestion.

II. To preserve the balance between disintegration and elimination, by retarding the former, and aiding the latter.

III. To meet the various derangements of the sensory and excito-motor ganglia, by sedative or excitant remedies.

I. By cerebral congestion I mean active inflammatory congestion, which being ascertained to exist, no matter at what period of the fever, should be treated with the same activity as if in a subject not affected with fever: in fact, I have witnessed the greatest proportion of success from antiphlogistic measures in the most advanced periods, more especially on the eve of and after crisis. At this stage, leeching, cold to the head, tartar emetic, and mercury, seem to act more beneficially than at any other. The condition of the heart may be relied on with the greatest confidence as a test of the extent to which depletory measures may be safely carried: so long as its impulse is strong and jerking, and the first sound over the left ventricle pronounced, and in full proportion to the second, no fear need be entertained of these doing injury. It is many years since I submitted this test of the nature of cerebral excitement to the notice of the profession, and I can say that it has never since deceived me. It is scarcely necessary to add, that I do not consider the above measures indicated by the purely febrile nervous lesions, however severe; for these the true antidote is wine.

II. The balance between disintegration and elimination may be preserved by retarding the tendency to the former, so manifest in fever, and by occasionally aiding or exciting the latter through the medium of one or more of the excretions.

Much of the general management of a fever patient has either a direct or indirect influence on the increased tendency to disintegration and accumulation of its products in the blood; thus we guard against such accumulation by enforcing absolute rest, by ventilation, by judicious regulation of temperature, and by giving suitable nourishment—excessive cold and abstinence both favouring disintegration. If, therefore, in a case of fever, more especially in the wealthy classes, we have reason to dread serious cerebral complications, "not inflammatory," we use warm rather than cold applications to the head, with warm fomentations to the lower limbs, and we commence the exhibition of some bland nourishment at an early period; we also avoid the too prevalent practice of giving drastic purgatives, having seen numerous instances of the most serious nervous symptoms induced by their operation upon the blood. Among the remedies of this class we are considering, alcoholic fluids deserve especial mention, for although their first and most obvious effect is as stimulants of the nervous system and of the heart's action, there can be no doubt that much of their beneficial influence is due to their power of retarding waste of tissue.

Sometimes, however, to preserve or restore this balance, a more active species of interference is called for, and increased elimination by one or more of the excreting organs gives marked relief to the nervous centres, labouring under the poisonous influence of blood-contamination. The two medicines which seem to exert this power in the most marked degree are tartar emetic and oil of turpentine.

A perusal of Dr. Graves' remarkable cases of delirium, treated by tartar emetic alone, or in combination with opium, will show, first, that marked improvement coincided with a critical day in a large proportion, if not in all; and secondly, that it was, in nearly all cases, accompanied by vomiting or purging of bile, copious diaphoresis, or diuresis. I have sometimes seen an equally beneficial effect follow from the action of turpentine in purgative doses when cerebral symptoms seemed most urgent. The conditions for its employment are stated by Copland to be distention of the abdomen and tympanitis, conjoined with delirium or coma.

I have before me notes of a case of recovery under apparently hopeless circumstances after the use of this remedy. The patient, a strong man, aged 35, was admitted into hospital under my care, at an advanced period of typhus in a state of collapse; pulse 132, small and compressible; skin cold; tongue dry and shrivelled; abdomen tympanitic; involuntary discharges, &c. Under the free use of wine and ammonia he rallied during the following two days, but on the third his condition appeared desperate. He lay in a state of stupor, with muddy and livid face, general tremor and convulsive startings, incessant rolling of the tongue, tumid and tympanitic belly, &c. &c. There had been no evacuation from the bowels for two days, and I, therefore, determined to try the chance of an aperient in combination with turpentine, of which I prescribed three drachms in a castor-oil draught. He had a copious discharge of dark liquid matter, and on the following day was perfectly conscious, and, in fact, free from fever, no other critical evacuation having been observed to occur.

III. Watchfulness is the most characteristic and most formidable symptom of heightened consciousness, but as its pathological cause is various, so it will be successfully met by various remedial measures. In one case, sponging the head and surface of the body with warm water will procure sleep; in another, cold applied to the shaven scalp; in another, a few leeches; in another, a blister; in another, wine[a] or opium, hyoscyamus or chloroform.

Of these various remedies, the most powerful for good or evil is opium, and the question of its exhibition is perhaps the most difficult and responsible which the physician meets in the treatment of fever. From the great success which attended the practice of Dr. Graves in an epidemic with severe cerebral complications, that eminent observer was led to believe that he had discovered a combination of more general applicancy than subsequent experience has proved it to be, and the difficulties attending the exhibition of opium, whether alone or in combination with tartar emetic, are scarcely less than before he wrote. Still, I cannot agree with those medical men who regard opium as almost invariably injurious, or who teach that it impairs the function of nutrition, &c.[b] The truth seems to be, that at a certain stage in many cases of fever, opium is scarcely less necessary than wine, while in others, like wine, it acts as a poison. To determine to which class a given case belongs is a question demanding the most extended and careful inquiry and consideration.

We shall find that the general indications for its exhibition or non-exhibition in fever are closely analogous to those in other morbid states. Thus, opium invariably produces a good effect when the sensorium is exhausted from pain, or from fatigue or mental exertion, cold or depressing emotion.

2. In melancholia.

3. In chronic poisoning by alcohol.

4. In want of due supply of blood to the brain, as in hemorrhages.

5. When the function of molecular nutrition is impaired, as shown by the existence of sloughing or indolent ulcers.

While it acts injuriously in active arterial congestion of the brain, or in inflammation eventuating in exudation of serum or lymph, with symptoms of compression, as coma, slow pulse, laborious breathing, rigidity of muscles, &c.

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[a] The calmative influence of wine in fever is well and tersely stated by Whitaker:—"Magna quantitate sumptum omnem vehementiam sedat, nam qualitate narcotici colligit sensus, somnum conciliat deliria et dolores acutissimos capitis imminuit."

[b] See Dr. Corrigan's Lectures on Fever, p. 27.

2. In most cases of mania.

3. In several forms of blood-poisoning, as venosity in bronchitis, with congestion and deficient contractility of the right ventricle; and in uremia; in both of which the symptoms bear a resemblance to those of narcotism, and are simply and surely aggravated by opium[a].

Similarly in fever, attentive observation will show that in arterial congestion of the brain, indicated by heat of scalp, corrugated brow, injected eye, hard, jerking pulse, whether quick or morbidly slow, and, more than all, by a jerking, impulsive action of the heart, with augmented first sound, the effect of opium will be to increase the force of the heart, heighten the delirium, and produce silence, inability to protrude the tongue or to swallow, rigidity of the limbs, immobility of pupil, convulsions, coma, and death. Or, if there exists a bronchial or pulmonary congestion, or retention or suppression of urine, with symptoms of uremic poisoning, the coma supervening in these states will be hastened by giving opium, and the complication rendered far more serious and intractable than before. But if, in the absence of any of these conditions, the patient has been accustomed to the use of ardent spirits, or if the sensorium has been exhausted by previous study, fatigue, mental emotion, or debauchery, by pain and by watchfulness, apart from actual derangement of the cerebral circulation; more especially if the delirium is of a low and hysterical character, not fierce, but desponding; if, during the stage of reaction and excitement, evacuant remedies have been freely resorted to,—it may be safely asserted that there exists a general indication for the exhibition of opium.

Into the question of special indications and modes of exhibition it is not my purpose at present to enter, but it may be observed that, while in some cases a single full opiate may be advantageously given on alternate nights, in others, probably the majority, the plan proposed by Fordyce, of minute doses given at stated intervals, will be attended with the best effects. I may here remark, that opium or morphia may be given in full doses, without any apprehension, in the watchfulness and delirium following crisis. I have given two grains of muriate of morphia, in the course of a few hours, to a patient in this condition, with the best effects. It is worthy of remark, that in the same condition wine is generally, if not uniformly, injurious, producing excitement of the heart's action, heat and dryness of the skin, restlessness and increased delirium. I have often seen these effects from continuing the exhibition of wine in large quantity after crisis.

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[a] I have not met with any statement of the effects of opium in various pathological conditions so satisfactory as that of Barbier (Matière Médicale, tom. iii. p. 50), to which I would refer the reader, the passage being too long for quotation.

The necessity for arousing the sensory and excito-motor centres by external and internal stimulants, and thus keeping up the power of deglutition, respiration, and the heart's action, is but too apparent in many cases in the advanced periods of fever. Brandy, wine, camphor, musk, ammonia, are the internal agents usually employed for this purpose; to which have occasionally been added arnica, phosphorus, cantharides, turpentine, and others. Externally, sinapisms and blisters seem occasionally to be useful, by arousing the sensational consciousness, by the loss of which the great centres are deprived of a means of sustaining the necessary reflex actions, both of the hemispheres and excito-motor ganglia. Analogy and experience would lead us to consider that the practice, so common among the ignorant, of excluding light from the chamber of the patient in advanced fever, must be injurious. We know that in some morbid conditions of the nervous system the patient cannot sleep if the stimulus of light is withdrawn, the respiration becoming at once difficult. This is not an uncommon occurrence in some forms of hysterical delirium and coma. In endeavouring to arouse sensational consciousness, however, by external stimulation, or counter-irritation, we should avoid unnecessary pain or discharge; pain exhausts the nervous energy; and some of our best observers among the older writers have noticed the bad effect of excessive discharge from blisters at a late period of fever.

Art. IX.—*Observations on the Treatment of Stricture of the Urethra.* By Samuel G. Wilmot, M.D., Surgeon to Steevens' Hospital, Lecturer on Surgery in the Carmichael School of Medicine, &c., &c.

It has been too much the habit to regard as unworthy of notice any communication except one which embodies some novel idea or purely original views. In a practical science like surgery, however, far more good is in general done by directing attention to special points, enlarging the field that has already been sown, and maturing its products, rather than by bending the mind exclusively to the conception and propounding of novelty. A novel idea, though full of merit from being the result of deep reflection and close reasoning, unaided by any light antecedently shed upon the subject, may, in point of utility, be valueless; while the accomplishment of the task just mentioned can hardly fail to prove of practical use to some, and, perhaps, suggestive to all. This observation applies with peculiar force to the subject of the present communication, and may be deemed a sufficient excuse for introducing one here, which to many may seem too often touched upon. The admitted difficulty of effecting a satisfactory and a permanent cure of stricture of the urethra has led, from time to time, to various proposals, modifications of treatment, and mechanical inventions,—a partial analysis of which, in connexion with a consideration of certain practical features, witnessed during the management of this disease, may not be devoid of interest nor advantage. We may divide strictures, so far as their treatment is concerned, into yielding and unyielding; these terms appear preferable to "permeable" and "impermeable," "passable" and "impassable," which are wanting in logical accuracy. It is obvious that no stricture is *impermeable*, unless there be occlusion of the canal preventing the passage of a drop of urine. The boast of a late celebrated operator, that he was able to pass a large instrument through the most impermeable stricture, being a glaring paradox, is an abuse of language; while the assertion of Mr. Syme, that he has never failed to introduce into the tightest stricture the staff designed by him for the "perineal section"—and certainly in less skilful hands than his this instrument has been passed when every other kind has failed—would go to establish that no stricture is exactly impassable. The terms 'yielding' and 'unyielding' are, therefore, less open to objection; they mean such strictures, respectively, as obey or resist the bougie employed on the principle of absorption. When a patient applies to a surgeon, complaining of difficulty of micturition the latter is not to assume that the case is necessarily one of stricture; his duty is, of course, to explore the urethra, but let him not be so far influenced by the statement of the individual, as to the size of the stream of urine, and the difficulty of expelling it, as to be led to employ a small instrument, which cannot afford satisfactory evidence, while it may inflict mischief on the lining membrane of the canal.

I pointed out, in the February Number, for 1856, of this Journal, in an article on the Differential Diagnosis of Stricture of the Urethra, the many sources of deception which were encountered in the exploration of the urethra, and endeavoured to show that in certain conditions of the canal, which led to manifestations similar to those of stricture, while a small instrument hitches and is obstructed in its progress, a full-sized one would often pass with ease. The proper instrument with which at first to explore the urethra is a plaster or gum-elastic bougie of not less than No. 8 size; if this pass readily, there can be no decided obstruction; in a few cases, however, owing to the unusually large caliber of the canal, a relative contraction may exist, which is insufficient to impede the passage of a No. 8 instrument; in this case the presence of an obstruction cannot of course be ascertained, unless a much larger bougie be employed. If the instrument be arrested in the prostatic part of the urethra, we are not to conclude that a stricture exists here, nor that there is any enlargement of the prostate gland. Certain conditions, which have been also noticed in the article already alluded to, are met with in this situation, which in no respect belong to either of these obstructions, though they impede a straight flexible instrument; such conditions are found where there has never been gonorrhœa, and mostly in persons of a relaxed and feeble frame, particularly those who have suffered long from seminal emissions. In such cases a solid curved instrument will pass readily, especially in the erect position, proving that stricture, in the proper acceptation of the term, does not exist. If either or both of these instruments, the straight and the curved, be repulsed, we have then positive evidence of the presence of stricture. Our primary object should be to *cause absorption* of the stricture, which is effected by the introduction of instruments gradually increased in size, and not to endeavour to cure it on the false principle of dilatation, which cannot remove an adventitious product, and may create much mischief if rudely carried out. In order to produce absorption of stricture speedily and satisfactorily, it is of advantage that the instrument should be passed fairly through it, for when the latter is brought in contact with the entire extent of the newly organized structure, its absorption is much more readily excited than where contact takes place only with the surface of the stricture; hence it is necessary to descend in the scale of sizes until we arrive at one sufficiently small to pass.

In extremely tight stricture, the instruments with which we are most apt to succeed are the catgut bougie, the catheter of No. 1 size, or that under it, with or without a stillette, and the French conical bougie, with long, delicate tapering extremity. Where the stricture is dense and elastic, and that it lies in front of the bulb of the urethra, the catgut bougie seldom fails us. It must be curved slightly at the point, as recommended by Sir Benjamin Brodie, and, being held rather long, is to be slowly introduced. When it first meets the obstruction, it bends, and conveys the sensation of having come in contact with a firm, unyielding obstruction; without, however, changing the point at which the fingers hold the instrument, let it be steadily and firmly pressed on, and it will, except in few cases, pass, if not into the bladder, at least completely through the stricture. When the stricture is very close and dense, and of long extent, this, what may be called forcible entrance by a catgut bougie, imparts a peculiar friction feel to the hand, such as would be caused by forcing through a piece of India-rubber, so much so, that the unpractised may be alarmed, imagining that the instrument is not taking its proper course along the urethra. If the obstruction lie nearer the neck of the bladder than the ordinary situation, a straight instrument will seldom be of use: the very small catheter, furnished with a stillette, will often pass; in using it, however, great caution and delicacy must be observed, since its point is so apt to hitch in the lacunæ of the urethra and the ducts of the prostate gland, and thus cause pain and bleeding. When the stricture is not particularly dense, being difficult of penetration only on account of the smallness of its aperture, no instrument is so likely to pass as the French conical bougie. Some of these are exquisitely fine, and, seeing their extreme delicacy and soft unresisting quality, it might well be imagined that they are practically useless, that, if capable of introduction into the urethra, they must necessarily coil up. Where, however, the proper tactile sensibility exists, such a casualty cannot occur, the hand at once recognises when the instrument hitches or becomes arrested, no matter how soft and unresisting it may be. We are to hold the bougie short, and push it on *bit by bit* slowly and gently, at the same time not stretching the penis too much; when a hitch is experienced, let it be drawn back about half an inch, and then directed forward again. When it gains its way through the obstruction, it seems quite loose in the canal, and it is in general advisable to retain it there for about twenty-four hours, as the urine can be readily discharged along its sides. Another species of instrument, well calculated to prove of use, is that which has been invented by Mr. Thomas Wakley, of the Free Hospital in London, and which is now well known to the profession. Apart from the ingeniousness of this instrument and the plan of its action, it has the power of curing stricture with great expedition, which, though not always of advantage, is sometimes requisite. It is proper, however, to observe, that the *principle of passing* *through a stricture* involved in Mr. Wakley's plan is not new to Dublin surgeons, since Mr. Hutton, of the Richmond Hospital, has, for many years past, been in the habit of employing, under the name of the "railroad catheter," an instrument for the relief of retention of urine, the introduction of which is conducted on a similar principle. This circumstance need not detract from the merit due to Mr. Wakley, for his instrument is not only of a different character, but is designed for the *cure* of stricture.

If we fail in getting any kind of instrument to pass, we must then endeavour to effect absorption of the stricture by the slower method of introducing a bougie and pressing it steadily onwards for some time, repeating this process every second, third, or fourth day, according to circumstances. In some cases a stricture which has refused admittance to the smallest instrument perseveringly employed will, in the course of three or four hours, yield to the pressure of a moderate-sized bougie; in most instances, however, it is necessary to maintain the pressure for a much longer period, even for two or three days consecutively. As a result of this plan, there is copious mucous discharge from the lining membrane of the canal, under which the obstruction seems to give, and as the instrument is pressed forward, it approaches nearer and nearer to the bladder. The process which here takes place has been called by Dupuytren "vital dilatation," than which there is no more incorrect term. It would convey the idea that an *active* state of dilatation took place in the stricture, whereas, if dilatation occur at all, it must be of a passive kind, being the *mechanical effect* of the instrument. It is obvious, on a little reflection, that where stricture yields suddenly to the pressure of a bougie, maintained for only a short time, the event is due to relaxation of spasm, which so frequently is associated with stricture, and which is by far more frequently the cause of its impenetrability, than the narrowness of the canal through it. Relaxation of spasm cannot be correctly termed an active state; contraction is the active condition, which ceases when relaxation occurs. Where the stricture yields after a prolonged continuance of the firm pressure, it is owing to rapid absorption of the adventitious product which occurs with facility in proportion to the recency of its formation. It is therefore quite unnecessary to resort to the vague supposition of a "vital dilatation," in order to account for the result of pressure exercised against a stricture, it being due either to relaxation of spasm, or rapid absorption.

When we cannot pass an instrument through a stricture, nor overcome it in the manner last described, we must refer it to the unyielding class, and treat it accordingly. Now, strictures may be *absolutely* unyielding, or only *relatively* so. A stricture may be so dense and callous as to be unsusceptible of the stimulus of the bougie, or it may be quite susceptible of absorption, but not amenable, from various causes, to the method of treatment necessary to effect it. The principal of these causes are—predisposition to rigors, spasms of the urethral muscular fibres, morbid irritability of the canal, hemorrhage readily produced, and pre-existing false passage. These, which are complications of stricture, must be removed before the disease can be effectually overcome, or, if not altogether removable, we must evade them, or take precautions against their occurrence.

Rigors, it should be remembered, result in general from some injudiciousness in the manner the instrument is employed—its size being too large, its being too frequently introduced, and especially gentleness not being observed in manipulating with it; accordingly, in all cases in which there exists a disposition to rigor, the instrument should be very gently handled, its size very gradually increased, and a longer time than would otherwise be allowed, permitted to elapse between each introduction. By observing these precepts, and taking care to administer an opiate after or before the operation, sometimes at both periods, we shall in general be able to proceed with the cure of the stricture, the patient being unmolested by rigors. Sometimes, however, the predisposition is so strong that, no matter what precautions be taken, rigors will occur every time an instrument is introduced, and if its use be persevered in, a low, febrile state of system, marked with extreme debility, supervenes, the continuance of which shatters the patient's health. In a few cases we may, by the administration of quina in considerable doses (if the stomach can bear it, which is the exception to the rule), associated with opiates, be able to evade the occurrence of rigors, and cure the stricture; but, in general, it is better to abandon the use of the bougie *temporarily*, and not to resume it until, by change of air and attention to other particulars regarding the general health, the predisposition is destroyed or lessened. Sometimes, by adopting the method recommended by Sir Benjamin Brodie, of retaining a catheter in the bladder, rigors are prevented, and the stricture is expeditiously cured; this is, however, a plan that cannot always be carried out, owing to the local irritation and febrile excitement of system it is so apt to occasion. Now the rigors to which allusion has been made are followed by a hot and sweating stage; there is a complete febrile paroxysm, sometimes of great intensity, and these, after frequently recurring, invariably lapse into a low continued form of fever, from which the patient takes a long time to recover. There is, hower, a very different kind of rigor from this met with as the consequence of the introduction of instruments for the cure of stricture, which it is important for the surgeon to distinguish. This sort is slight compared with the other, and is not followed by any *marked* hot and sweating stage, nor does it glide into regular fever, the debility which results from it being the effect of depression of the nervous system and not of pure febrile disturbance. Persons disposed to such rigors are of highly nervous, irritable temperament, often dyspeptic and hypochondriacal, complaining of various symptoms which are referable more to imagination than to actual physical derangement. These individuals dread the idea of having an instrument introduced, and in general faint or grow sick on the first two or three occasions of its being done. The treatment to be adopted here is sedative and tonic. The preparations of iron and zinc are the medicines which, combined with the daily use of the shower-bath, exercise most influence in altering the peculiar state of system which induces these rigors. The valerianate of zinc I have found a most useful agent where such mobility of system exists. On the first two or three occasions it is necessary to administer an opiate, combined with some warm aromatic, a couple of hours before the instrument is introduced; afterwards, it is desirable to leave off the opium, as it cannot fail to increase the dyspeptic symptoms, and to substitute for it hyoscyamus, or, what answers better in many cases, a little warm negus, or brandy and water.

Another event which defeats the success of the bougie is, the occurrence of urethral spasm, which not alone prevents the passage of the instrument, but often leads to retention of urine. In the article before referred to, I dwelt particularly on muscular spasm of the urethra, pointing out its two-fold source—contraction of the voluntary and involuntary muscular fibres, and showed that that can be only effective spasm which results from contraction of the former.

The means to be adopted for the purpose of evading the occurrence of spasm are very similar to those laid down for obviating rigors. An opiate should be administered a couple of hours before the instrument is introduced, and care must be taken to increase its size *gradually*, and to allow at least four days to elapse between each introduction.

In addition, the patient must be made to avoid all the exciting causes of spasm, the most efficient of which are the use of wine and spirits, and exposure to wet and cold. In many instances the proneness to spasm is so strong that no precaution taken by the surgeon and patient conjointly will evade it, and it then becomes necessary to suspend the use of the bougie, and to endeavour to correct the condition to which we can trace the predisposition. If, as is usually the case, we find a general irritable state of system, coupled with gastric and hepatic derangement, we must prescribe accordingly. So, also, if there be any particular morbid state of the urine, or any gouty disposition; if there be a relaxed and feeble state of system, arising chiefly from long-continued habits of dissipation,—the preparations of iron and zinc, with sea-bathing, are the most effectual remedies. If there be no tangible state of system that can account for the predisposition, but that there be an undue amount of sensitiveness in the neighbourhood of the stricture, one or two slight applications of the nitrate of silver will destroy the tendency to spasm. For this means of overcoming spasm in connexion with organic stricture, we are indebted, among many other valuable practical suggestions, to Sir Benjamin Brodie. As soon as the general health has been improved, or the peculiar condition which creates the predisposition to spasm corrected, the use of the bougie may be resumed with every prospect of its proving successful, if prudence be observed, and a proper regard paid to the rules already mentioned.

Closely associated with spasm, being often its sole cause, is the third circumstance mentioned as interfering with the successful employment of the bougie,—morbid irritability of the canal,—irritable urethra, as it has been termed. This is one of the most common and ungovernable opponents to the cure of stricture. Every time the instrument is introduced, the patient is seized afterwards with pain, scalding, and increased difficulty in expelling the urine, accompanied, in general, by puriform discharge, so that in symptoms and aspect the case is rendered similar to acute gonorrhœa. When the irritability is but slight, it may disappear after the bougie has been passed two or three times, if it be done with judgment; but in general the affection cannot be so easily dealt with. Irritable urethra may be considered as almost always *remotely* constitutional in its origin. It is true that, in most cases, it can be traced *immediately* to neglected or badly treated gonorrhœa, or gleet, or to mismanagement of stricture, or to the contraction of acute gonorrhœa during the formation of stricture, and in not a few instances to the abuse of wine and spirits; but even in these cases some condition of constitution exists which perpetuates the urethral affection, and renders it disobedient to treatment; this, in nine cases out of ten, is the strumous diathesis. Sometimes (though the cases are rare), the strumous disposition is so strong as to give to the local affection a peculiar or specific character.

In the February Number of this Journal, for the year 1851, I described, under the appellation of "Strumous Urethritis," the most extensive and intractable form of "irritable urethra" met with in practice; and which subsequent observation has led me to believe is, in most cases, associated with not only tubercular deposit in the prostate gland and epididymis, but renal disease of the same character.

Where the irritable state of the urethra is slight, and principally local in its character, there is no more efficient means of removing it than by making one or two applications of the lunar caustic, as already mentioned; but when there is a constitutional cause in operation this must be destroyed, or in some way altered, before the local irritability will yield, and a satisfactory cure of the stricture by means of the bougie effected. For this purpose a tonic course of medicine, sea-bathing, and a generous but non-stimulating system of diet, must be adopted. The muriated tincture and aromatic mixture of iron are most valuable agents here. Where there is positive strumous urethritis, I have found most benefit to result from the iodide of iron, in combination with the extract of hemlock, and also small doses of the iodide of potassium, administered in infusion of buchu, or the decoction of uva ursi. Very often the bougie can be employed, and with advantage, if cautiously done, during the constitutional treatment, and thus much time is saved; sometimes, however, the introduction of the instrument aggravates all the distressing symptoms, so much so that it becomes necessary to abandon it until the constitutional treatment has caused a decided abatement of the local irritability. The fourth event which is apt to interrupt the success of the bougie is bleeding from the urethra every time it is introduced. Apart from violence, which is the usual cause of the bleeding when it occurs to any extent, it may be produced by laceration of the lining membrane, or rupture of the lacunæ by a small pointed instrument, which sometimes is unavoidably selected.

In some cases, however, the bleeding cannot be accounted for in this manner, and then it must be the consequence of rupture of the vessels around the stricture, from the pressure of the instrument's point. Strictures of recent formation are sometimes extremely vascular and pulpy, and the vessels in the neighbourhood of those of old standing are often so tortuous and dilated, and their parietes so thin, that almost the gentlest touch of an instrument will rupture them, and cause bleeding sufficient to alarm the patient and make the surgeon desist. A similar state of vessels is met with in the prostatic part of the urethra, in connexion with the "bar" at the neck of the bladder in old persons, so that, when the instrument tilts against the fold, their rupture is inevitable, the blood following its withdrawal in successive jets. The casualty of urethral hemorrhage from the employment of instruments under the circumstances here noticed is not easily evaded. In general, no doubt, a repetition of it does not occur beyond the second, third, or fourth occasion, but often the same result will ensue every time the instrument is introduced; and since, when it occurs to any extent, it becomes necessary to withdraw the instrument without making any further attempt, the progress of the cure is effectually checked. Sometimes, by attending to the kind of instrument used, a repetition of the bleeding may, in great measure, be avoided. If we find it to follow the introduction of a straight one, it is proper, on the next occasion, to try a curved; and so, if it have been a gum-elastic instrument, a metallic one ought to be substituted, and where the obstruction lies much behind the bulb it should always be of the latter description, since it necessarily exercises less pressure on the floor of the urethra, as it passes along, than the straight bougie. In all cases where there is a tendency to bleeding, the instrument employed should of course be as large as the stricture will allow. If the bleeding be very frequent and troublesome, it is then advisable to endeavour to introduce a gum-elastic catheter, and, when this is effected, to retain it in the bladder, and to cure the stricture by this means. The last of the circumstances enumerated, as rendering our efforts to cure stricture on the principle of absorption abortive, is pre-existing false passage. This is, perhaps, the most perplexing of the complications of stricture, for the instruments which, from their small size, are best calculated to pass through the obstruction, find their way the more readily into the wrong course. The catgut bougie, well curved, often succeeds where there is tight stricture and false passage, and, once it is fairly in the obstruction, by swelling to double its size, it makes way for a good-sized catheter, which it is prudent, for a two-fold reason, to retain in the bladder.

We shall seldom, however, be fortunate enough to introduce any kind of instrument in accordance with the rules of gentle manipulation. It becomes almost invariably necessary to *force* the stricture, this being one of the two occasions in the practice of catheterism, in which the exercise of force is warrantable. It is in carrying out this procedure that the skill and steadiness of the catheterist are best displayed. A metallic catheter, as firm and resisting as possible, should be employed: it must not be too small, lest it should the more readily slip into the false passage; neither must it be too large, as then there would be little chance of its proving effective upon the stricture. The catheter of No. 4 or 5 size is what I generally use for this purpose, and I prefer those of German than of sterling silver, as they are much stronger and less elastic. It is generally recommended to employ, where false passage exists, a well-curved instrument, but I have in the majority of cases found the ordinary shape more manageable and effective. It is difficult to apply the end of a much curved instrument to the face of a stricture; in the act of depressing the handle, the point will be apt to tilt too much against the upper wall of the canal, and it is obvious that the stricture cannot be entered unless the instrument be applied fairly to its orifice. We should, from the very commencement of its introduction, observe to slide the instrument along the upper wall of the canal, to maintain it fairly in the mesial line, depress it early, and, while so doing, to keep the point close round the arch of the pubis; when the stricture is met, the instrument is to be firmly and steadily pressed against it, the force being gradually increased, while the fingers of the left hand are to be applied to the perineum, so as to assist in maintaining the point *in situ*. Under this well-directed and gradually increased force, the stricture will in general yield, if not entirely, partially, and then, on a repetition of this procedure, complete success will be achieved. The objection to making an attempt to force a stricture where false passage exists, is the risk that the instrument may take the wrong course, in which case the damage done by the exercise of so much force would be incalculable. The practised hand, however, will soon recognise when the instrument has slipped into the wrong channel, and no surgeon with a proper amount of the "tactus eruditus" can confound the sensation experienced in pressing against soft, unyielding tissue, with that conveyed where the opposing material is a firm, unresisting stricture.

So much for strictures whose unyieldingness or difficulty of being made obedient to the bougie depends on incidental circumstances. Of such as are unyielding from their own *intrinsic disposition* we meet with two kinds, those which are partially under the control of the bougie, and those which completely resist it. We occasionally meet with very tight strictures, which, nevertheless, yield with comparative facility up to a certain point, so as to admit a bougie of the size of No. 3, 4, or 5, but beyond this no advance can be gained, and whenever, in defiance of this stricture's habit, an attempt is made to increase the size of the instrument, it is seriously resented. One remarkable feature it possesses is, that it does not, like the resilient stricture to be presently noticed, fall back to its original closeness should the treatment be abandoned; it will, after the lapse of a couple of months' exemption from the influence of the bougie, admit the same sized one as was last employed. Strictures of this nature often remain stationary for years if the subjects of them will take the precaution of paying an occasional visit to a surgeon, but they frequently give considerable annoyance from the occurrence of spasm, which seems to arise from contraction of the involuntary more than of the voluntary muscular fibres. Retention of urine rarely occurs, but trivial causes, such as gastric derangement, slight cold, and changes of weather, produce an aggravation of the symptoms, which in many instances amounts to strangury. During these *exacerbations* the whole urethra is in a state of undue contraction; the instant the instrument is introduced into the orifice, it is sensibly grasped, and by this circumstance the surgeon may always know that he is to encounter resistance at the seat of the stricture. The pathology of this kind of stricture has not been exactly ascertained, but, from a consideration of its peculiar properties, I am inclined to think that the *elastic tissue* of the urethra is principally the seat of the organic change, and that there is hypertrophy or some such alteration in the layer of involuntary muscular fibre which lies in juxtaposition to the elastic tissue; that much of the adventitious structure which results from interstitial deposit in the mucous membrane is readily removed by the contact of the bougie; but the tissue outside this cannot be influenced by the instrument, unless decided dilatation be made, and it is easy to perceive how the stretching of an elastic structure, rendered dense and the more resisting by adventitious deposit, will lead to pain and inflammation and excite spasm. The most effectual means of dealing with this kind of stricture is to retain a catheter in the bladder. A smaller one than would pass should, in the first instance, be introduced, and this should not be replaced by one *a size* larger, until it has become quite loose in the canal, the object being to avoid any stretching of the strictured spot. No doubt, after this plan of treatment has been left off, the size of the instrument having been increased as much as is desirable, the canal almost invariably recontracts, but seldom *in this form of stricture*, to a point that will not admit a No. 6 or 7 bougie, so that a permanent advance of two degrees is thus gained.

Strictures which are completely unyielding must be overcome by one of the following methods:—Pressure so exercised as to cause its ulceration; the employment of caustic; or the division of it with a cutting instrument, either within the urethra or through the perineum. Many apparatuses have been invented for the purpose of submitting strictures to continued pressure, but they are all wanting in one essential qualification, that of being able to retain proper position; and it is obvious that if the point of an instrument come to bear on the floor of the urethra, and not against the stricture, it is apt to create much mischief, and soon becomes insupportable.

The only satisfactory mode of effecting ulceration of stricture by continued pressure against it, I have found, is by passing a strong conical gum-elastic bougie down to the obstruction, and making the patient himself hold it *in situ*. Very soon the apex of the instrument will enter the stricture, and will often be grasped sufficiently tight to allow of its remaining in during the night. Of course, in the day-time it must be withdrawn at stated intervals to permit the patient to pass water, but it is to be immediately re-introduced by the surgeon. I have succeeded in curing very obstinate strictures by this plan without any untoward occurrence. Ulceration of stricture, however, is an objectionable principle of cure, owing to the cicatrices which we have reason to believe must form in the lining membrane of the urethra. Nevertheless, this mode of treatment is sometimes preferable to the other plans, and is occasionally unavoidable from the refusal of the patient to submit to anything bordering on an operation.

Caustic is seldom resorted to at present as a means of destroying stricture; still, the nitrate of silver may be used with advantage occasionally where the stricture is nodulated, but of short extent.

The potassa fusa, the use of which has been revived by Mr. Wade, and applied by him in an improved manner, I have never employed.

The division of stricture with a cutting instrument within the canal is the most uncertain, dangerous, and, I may add, unnecessary method that can be resorted to. That through the perineum is one of the most important operations in surgery, and has been latterly materially modified by Mr. Syme of Edinburgh. Space will not allow more than a passing notice of the "perineal section," to which so much interest attaches, owing partly to the able manner in which Mr. Syme has advocated its claims, and to its having been made the subject of such active controversy among the profession throughout Great Britain.

If we regard the "perineal section" merely in its character as an operation, then it is, undoubtedly, the most perfect means of effecting the external division of a stricture, and is a vast improvement on the old method, which is at once difficult, incomplete, and dangerous. The profession is, therefore, indebted to its distinguished proposer for this excellent improvement in operative surgery. The claims of the "perineal section," however, have been chiefly based on its alleged power of preventing relapse, which is so striking a characteristic of some kinds of stricture. Every surgeon has met with strictures, so *resilient*, that in forty-eight hours after the withdrawal of a large catheter—the last of a series which have been retained in the bladder—it falls back to its original closeness, and the work of graduated instrumentation must be renewed, to be followed, in all probability, with a similar result. It is to give permanency to the cure, that Mr. Syme performs his operation in these cases. But, has the complete division of the stricture so desirable an effect? Nothing but statistics, founded on cases which have been kept under observation for *a long time* after, can furnish a satisfactory reply, and this sort of statistical evidence is certainly still wanting, though, no doubt, Mr. Syme will, ere long, supply it. It is true that he has already published a large number of cases in which the operation has, *in one sense*, been successful; but, except in a few, too short a period elapsed between the operation and the report of the case to allow any satisfactory conclusion to be drawn regarding the *permanency* of the cure effected. Again, the report of the cases in which the "perineal section" has been performed in England, I find much qualified, most of them being *more or less successful.* It has, I think, been sufficiently proved that Mr. Syme's operation affords a greater exemption from a return of the disease than the ordinary treatment by bougie or catheter; but unless it can give permanent security against relapse (which further observation will decide affirmatively or negatively), it will come to be a question, as to how far a partial achievement of the object is to be deemed an equivalent for the price at which it is purchased. In resilient strictures the corpus spongiosum is principally the seat of organic change; and in those which possess resilient properties in a very marked degree, I am confident that there is not merely deposit of lymph which can be absorbed, but transformation of the tissue, and in all probability hypertrophy of both layers of the involuntary muscular fibres, which have been demonstrated by Mr. Hancock, of London, to enclose the corpus spongiosum. Now, all strictures return, more or less, after the use of the bougie is relinquished, unless those that are incipient, and are formed by deposit in the lining membrane of the urethra, or in the submucous tissue to a superficial extent, and the reason these are completely curable is, that the instrument can act directly on the strictured spot. When, however, the deposit has been laid in the cells of the corpus spongiosum, it lies beyond the reach of the instrument, which is, therefore, powerless to effect its absorption, unless it be so large as to considerably stretch the canal. Accordingly, if we are to gain much in these cases, we must increase the size of the instrument far beyond what is necessary in other cases; and I suspect it is to the omission of this so many relapses occur, and in truth relapse implies *incomplete* cure. But often the employment of very large instruments is impossible, owing to the pain and irritation, particularly at the neck of the bladder, they occasion; besides, the orifice being smaller than the rest of the canal, one that would be of the proper size for the purpose might not gain admittance. An instrument that would distend the strictured part to the fullest extent, without equally dilating the rest of the urethra, would exactly fulfil the purpose required, and such a one we possess in that extremely ingenious contrivance, the "fluid dilator," of Dr. James Arnott. I cannot, from any personal experience, speak of the merits of this instrument; its only defect appears to be the difficulty of its being introduced, but I have no doubt that, as it has already undergone an improvement upon its original construction at the hands of its inventor, it will be rendered still more efficient. To remove stricture is of advantage, but to cure, which, in a disease such as stricture, means not only removal but *security against relapse*, is far more important, and the greatness of this object should stimulate surgeons to originate means for its accomplishment, or render more perfect those existing.

Art. X.—*Observations on the Human Crania contained in the Museum of the Army Medical Department, Fort Pitt, Chatham.* By George Williamson, M.D., Staff Surgeon, Second Class.

The skulls contained in the collection have been arranged into four classes: first, the oval-shaped skulls; second, skulls with projecting alveolar processes, or with the nasal bones on the same plane; third, skulls with very prominent superciliary ridges; fourth, skulls with broad and flat face.

The first class includes the Europeans, Egyptians, Afghans, Hindoo, and Singalese; also the New Zealanders and Otaheiteans. The skulls of the last two have not been placed (consecutively, as regards the numbers) with the oval-shaped skulls, but are left among those from Polynesia, being marked as oval-shaped skulls. It was thought advisable to leave them among the skulls from the same group of islands, for the sake of comparison.

The second class embraces the Negroes from the west coast of Africa, the Kaffirs, Hottentots, and Bushmans; those from Mozambique, Madagascar; the black natives from the Mauritius, New South Wales, and Van Diemen's Land. Some of the Kaffir skulls resemble the European; yet the greater number show characters, although differing in many respects from the Negro, still more nearly allied to them than to any other class of skulls. Although the Hottentot and Bushman have not the projecting jaw of the Negro, they have the nasal bones flatter, and on the same plane, and with great breadth between the eyes; the size and form of the anterior nasal apertures are also that of the Negro. The skulls from Mozambique, Madagascar, Mauritius, New South Wales, and Van Diemen's Land, have the aveolar processes projecting.

The third class contains only the Sandwich Islanders. The superciliary ridge is so prominent as to project in the front of the face.

The fourth class includes the Burmese, Malays, Chinese, Esquimaux, and North American Indians. The Malay and Esquimaux show the characters of the broad-faced skulls in the most marked degree, but particularly the latter, which have also other characters peculiar to themselves. The Chinese present the same characters in a moderate form; and the North American Indians show some of the characters of the broad-faced skulls, but have points peculiar to themselves.

The characters stated as marking the four classes of skulls, and the division into races, are those usually found, but there are no characters which are universally present in any race. For example: in the Negro race, the Mandingoes' skulls are well formed, and approach to the European, and show few of the Negro characters; on the other hand, the Kroomen display these characters in their exaggerated form. In the same manner, although in the majority of the Kaffirs' skulls there are characters which distinguish them from other races, yet there are some skulls which resemble the best-formed European. There are, therefore, no characters to be found universally marking any race.

It is very difficult to convey an accurate idea of the various differences observed in skulls, by description. Drawings would, no doubt, greatly assist, yet several views of the same skull would be required, so as to display all its peculiarities: an inspection of the skulls themselves is, therefore, the only way of becoming minutely acquainted with the subject.

The characters of each race have been given as minutely as possible. In the description of each skull, notice is not taken of the form of the anterior nasal aperture, the want of superciliary ridge, the ridge for the attachment of the temporal muscle, the size of the orbits and pterygoid processes, &c., where they agree with the general description given of each particular race; the peculiarities which each present are only noted.

The form of the anterior nasal aperture seems to me to be of great value, when taken in conjunction with the other characters of any particular race. The mere outline which has been given will show, that the difference between the various races is very great; but this is much more apparent on examining the aperture itself, or if a drawing had been given of it, and not a mere outline. In the oval-shaped skulls the lower part of the opening is direct, and the margins sharp. In the Negroes, Kaffirs, Hottentots, and Bushmans, Madagascars, natives of the Mauritius, New South Wales, Van Diemen's Land, Sandwich Islands, and the Malays, the aperture is very wide, and of various forms; the lower angle and the margin of the aperture are rounded off; the superior part of the aperture is also wide, and generally forms a large segment of a circle: in others, the arch is cut off, and forms a straight line. The manner in which this is produced is endeavoured to be explained under the head of the Negroes. There is great difficulty in finding terms appropriate for the various forms. The Ashanti generally are of a rounded form, or like the old Saxon arch; as also the Kaffir, Hottentot, and Bushman; prognathous and broad-faced skulls partake more or less of this form, being also wide, and their angles rounded off. The forms are, however, given of each race or nation. The form of the anterior nasal aperture, in the oval-shaped skulls, is of moderate size, and not nearly so wide as in the other classes; its margins are sharp, and its angle is rounded off, and has something of the form of the old Gothic arch.

The following is the arrangement adopted in the Museum at Chatham:—

CLASS I.

OVAL, OR SYMMETRICAL SKULLS.

DIVISION.	NATION OR TRIBE.	NO. OF CRANIA.
1	Grecian {Ancient, 18 Modern, 8}	26
2	Albanian,	1
3	Maltese,	2
4	German,	2
5	French,	1
6	Spanish,	3
7	British,	87
8	Maniacs, idiots, &c.,	82
9	Egyptian {11 Crania, 2 Mummies,}	13
10	Baluchi and Afghan,	15
11	East Indian {19 Hindoo, 3 Moorman, 6 Pariah, 1 Thug,}	29
12	Singalese,	5

CLASS II.

SKULLS WITH PROGNATHOUS JAWS, OR HAVING THE NASAL BONES ON THE SAME PLANE.

DIVISION.	NATION OR TRIBE.	NO. OF CRANIA.
1	Mandingo,	4
2	Iolaf,	1
3	Timmani,	3
4	Sossoo,	2
5	Kasso,	3
6	Kroomen,	5
7	Hausa,	1
8	Hanti,	1
9	Attan, or Oppas,	2
10	Papas, or Mahai,	3
11	Barconka, or Maka,	2
12	Ibo,	10
13	Ashanti,	61
14	Colabar,	4
15	Kaunga,	3
16	Congo,	3

DIVISION.	NATION OR TRIBE.	NO. OF CRANIA.
17	Miscellaneous Africans,	20
18	Kaffir { Tambuki, Tribes not known, }	15
19	Hottentots { 7 Crania, 3 Dried heads, }	10
20	Bushman,	9
21	Mozambique { 1 Crania, 1 Dried head, }	2
22	Madecasse,	3
23	Mauritius,	2
24	Australian,	10
25	Van Diemen's Land,	2
	OVAL SKULLS.	
13	New Zealanders { 4 Crania, 2 Dried heads, }	6

CLASS III.

SKULLS WITH THE SUPERCILIARY RIDGE SO PROMINENT AS TO OVERSHADOW THE FACE.

DIVISION.	NATION OR TRIBE.	NO. OF CRANIA.
1	Sandwich Islanders,	5
	OVAL SKULLS.	
14	Otaheitean,	1

CLASS IV.

BROAD AND FLAT-FACED SKULLS.

DIVISION.	NATION OR TRIBE.	NO. OF CRANIA.
1	Burmese, Malays, &c.,	9
2	Chinese { 3 Crania, 1 Dried head, }	4
3	Esquimaux,	1
4	American Indians { 2 Round Crania, 2 Flat-headed, }	4

CASTS OF CRANIA.

Casts of eminent men,	6
,, Murderers, &c,	17
,, Africans' and Madagascar crania,	2
,, Australian crania,	2
,, American crania,	2

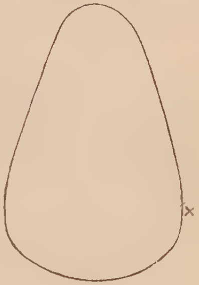
CLASS I.—OVAL, OR SYMMETRICAL SKULLS.

The head is of a round or oval shape; the forehead expanded; the maxillary bones and the zygomatic arches are so formed as to give to the face an oval shape, nearly on a plane with the forehead and cheek bones, and not projecting towards the lower part, as in other varieties of the human skull; the cheek bones neither project outwards and laterally, nor forwards; the upper maxillary bone has the alveolar process well rounded, the anterior portion having a curve in a perpendicular direction; this gives a perpendicular and not a projecting position to the front teeth, to which the lower jaw and its teeth correspond.

DIVISION 1.—GRECIAN.

There are twenty-six Greek skulls, of which eighteen are ancient, and eight modern.

The Greek skulls display in the highest degree the above general description of oval crania. The skull approaches to a spherical figure, with a remarkable elevation of the upper part, the forehead being highly and beautifully arched; the surface smooth, and without any irregular projecting angles; the superciliary ridges not much raised; the jaws are on a straight, perpendicular line, and the bones of the face are generally of small size; the superior maxillary bones, under the aperture of the nostrils are joined in a nearly perpendicular plane; the cheek bones even, and turned moderately downwards; the anterior nasal aperture is of moderate size, and of this form (No. 4), which is the same in all oval-shaped skulls; the margin of the aperture, from the point marked ×, is sharp, and not rounded off, as in the Negroes, Kaffirs, &c.; the portion of the superior maxillary bone forming the base of the opening is of moderate extent, and much smaller than in them; the external pterygoid process is not so large as in skulls of some other Indo-European nations; the orbits, likewise, are of moderate size, and of a circular form; the occiput is well rounded, and does not in general project; the space for the downward projection of the brain, in the occipital region, is well developed; the cranium is thinner, more dense and transparent, and of finer texture, than other races. Ossa triquetra were found in the occipital suture in ten, and in the temporal and sphenoid sutures in six instances. In one, the occipital foramen was small. There was a suture in the frontal bones in four instances.



No. 4.

No. 2. Ancient Grecian, from Samos.—A beautiful oval skull; forehead broad, high, and well arched; ridge for the attachment of muscles scarcely visible; bones of the face small; nasal bones small, but arched; structure of the bones of the skull of fine texture, and dense.—*Donor, Dr. M'Arthur, Surgeon, 90th Regiment.*

No. 8. Grecian, from Corfu.—Skull small, and of a peculiar square form; forehead high, and beautifully arched; vertex broad and flat; bones of face and forehead forming an angle of 85°.—*Donor, Dr. Davy, A.I.H.*

No. 20. Grecian, from an ancient tomb at Samos.—Cranium beautifully formed; forehead and vertex high, and extremely well arched, and the former making with the bones of the face an almost perpendicular line, or angle of 87°; orbits nearly circular; part of the base of the skull deficient.

DIVISION 2.—ALBANIAN.

No. 27. Skull of an Albanese.—Cranium well formed; forehead rather receding; a very large os triquetrum on the left side of the occipital suture.—*Purchased from the Mechanics' Institution, Chatham.*

DIVISION 3.—MALTESE.

No. 28. Cranium of a Maltese male, aged 42.—Cranium well formed.—*Donor, Dr. Lawson, A.S. Surgeon.*

DIVISION 4.—GERMAN.

The two German crania are large and round, with the anterior part elevated and fully developed; they have this peculiarity of form in a greater degree than either the French, Spaniard, or English. In No. 30, the transverse diameter of the base of the cranium is great, compared to the antero-posterior diameter; the space for the downward development of the brain is also great in both skulls.

No. 30. Skull of a German.—Cranium large and round; forehead and vertex high, broad, and well arched, and fully developed; occipital bone, and base of the skull, broad and flat; the transverse diameter is very great compared to its antero-posterior; the frontal bone, and the bones of the face, form almost a perpendicular line.—*Donor, Dr. Davy, A. I. H.*

DIVISION 5.—FRENCH.

No. 32. Skull of Pierre Delille, a Frenchman, aged 36.—Cranium large, round, and well formed; forehead high, and well arched; vertex high; superciliary ridge well marked; a deep, depressed line at the junction of the frontal and nasal bones; bones of the face large; lower jaw thick and strong.—*Donor, Mr. R. Clarke, Sierra Leone.*

DIVISION 6.—SPANIARDS.

There are three skulls of Spaniards.—The forehead is rather narrow, but in other respects they are well formed. In No. 34 the face is narrow, and the malar bones are flat on the head; Wormian bones are found in the occipital suture in one, and in the temporal and sphenoid suture in one; the foramen magnum is small in one.

No. 34. Skull of Bekely, a Spaniard, aged 21, engaged in the slave trade, who died at Sierra Leone.—Forehead narrow; left side of occiput projects more than the right side; face narrow and short, and has a contracted appearance; malar bones flat on the head, and proceed directly backwards.—*Donor, Mr. R. Clarke, Sierra Leone.*

DIVISION 7.—NATIVES OF GREAT BRITAIN.

There are eighty-seven crania of natives of Great Britain in the collection. The skulls were taken from soldiers, a class of men who are frequently wholly uneducated, and their mental faculties undeveloped, and are therefore not the best specimens of British skulls. I have not thought it necessary to separate the English, Scotch, and Irish, as the races are now so mixed that, if there were ever any difference or peculiarity in the confirmation of their crania, this has now become inappreciable. For those who are curious on this point, I have, when able, given the countries. As rather exaggerated specimens (with also some individual peculiarity) of the Celtic race, I may mention No. 117, a Scotch Highlander, and No. 118, an Irish rebel. Both show marks of belonging to an uncivilized or mountainous race: the bones of the Highlander are large, thick, and coarse in texture; those of the Irishman are thick, dense, and polished like ivory.

Nos. 43 and 61 also present individual peculiarities, which will be seen on referring to the description of the skulls.

The skulls of the inhabitants of Great Britain, and I may also include the few French, Spaniards, and Portuguese in the collection, are not of such a round shape as the Greek or German, but are more oblong, and their antero-posterior diameter is greater compared to the transverse diameter.

Wormian bones were found in the occipital suture in thirty-eight instances, and in one they were of a large size; these bones were also found in the temporal and sphenoid suture in eight instances; the occipital foramen was large in three, and small in four; a suture was found in the centre of the frontal bone in eight instances.

No. 43. Skull of Joseph Hudson, 40th Regiment, an Englishman, aged 21, who died of phthisis.—Cranium of large size, and of great weight—2 lbs. 4 oz. 3 drs.,—being 1 lb. more than the average weight; the section of the calvaria shows the bones to be of great thickness, being a quarter of an inch thick; the diplöe is of great extent; and the inner surface of the skull shows large, deep grooves and arborescence for the meningeal arteries; the forehead is high, and the vertex extremely flat and broad; the parietal protuberances are prominent, and between them, along the sagittal suture, there is a depressed groove; the coronal and sagittal sutures are obliterated; all the bones of the skull, with the exception of the temporal and sphenoid, and the bones of the face, are of the same thickness, and affected with the same disease.

No. 61. Skull of Stephen Robinson, 8th Regiment, an Englishman, aged 31.—Cranium of a most remarkable form, having a canoe or coffin-like shape, the head being of great length, and very narrow in proportion, sloping gradually, and becoming very contracted towards the sagittal suture, where it forms a narrow ridge; the occiput projects; the forehead is high, rather narrow in proportion to the size of the head, but well arched; sagittal suture obliterated; superior maxillary bones large.

No. 117. Skull of Scottish Highlander.—Cranium of great weight, viz., 2 lbs. 3 oz. 2 drs., being about 1 lb. more than the average weight; bones of great thickness and density, coarse, and the angles very prominent; forehead low and receding; superciliary ridges very prominent; bones of the face large; lower jaw large, and of great depth.

No. 118. Skull of Felix M'Dermott, an Irish rebel chief, who was killed at the battle of New Ross, county of Wexford.—Forehead rather low; superciliary ridges large, prominent; bones of great density, and highly polished, resembling ivory.—*Donor, Mr. Carline, Assistant Surgeon, 6th Dragoon Guards.*

DIVISION 8.—MANIACS.

Out of eighty-two crania of maniacs, the skull was found well formed in thirty-five; in forty-three the forehead was low, receding; narrow, or the anterior part small; in two, circular or round,—one of a square shape, one not symmetrical; the bones were thin in six, thick in six; small depressions for the glandulæ Pacchioni along the course of the longitudinal sinus in twenty-five, but no holes in any of them; arborescence, or marks of vascularity, on the inner table, chiefly in the course of the longitudinal sinus, in seventeen.

In eighty-two skulls of natives of Great Britain, all from soldiers of sound mind, the forehead was low and retreating in twenty; in two, not symmetrical; one, oblong; one, No. 61, circular or round; one, square; bones thin in three, thick in six; small depressions along the curve of the longitudinal sinus in twenty-nine; a small hole in one; arborescence, or marks of vascularity, in nineteen.

From the above statement it appears that the foreheads of maniacs are low, receding, narrow, or the anterior part small, in nearly the proportion of 2 to 1 of those of sound mind, and that all the other peculiarities which have been noted are nearly as frequently found in skulls from sane individuals; depressions or arborescence are only accidental appearances; bony projections were not found in one instance.

From the details given of the appearances after death, in fifty cases of maniacs, the following is the result:—The brain was healthy in twenty-two; in twenty-eight there was serous effusion at the base of the brain, or in the ventricles; membranes injected in eleven; in five, thickening of the membranes; effusion of lymph on the membranes in five; softening of some portion of the brain, generally of the corpus striatum or fornix, in ten; brain firm in five; the gray matter adhering to the pia mater, on being torn off, in three; ecchymosis below the membranes in two; an old apoplectic cell in one; small serous cysts in the corpus striatum in one; dura mater adhering intimately to the bones in two; dura mater thin along the course of the longitudinal sinus in one; a softened, fibrinous clot in the longitudinal sinus in one; longitudinal sinus vascular in one; a large opening in the falciform process in one; a cartilaginous tumour adhering to the arachnoid in one; calcareous matter in the choroid plexus in one; atheromatous deposit in the cerebral arteries in two; arteries small in one, enlarged in one; brain oblong and flattened in one; adhesions between the hemispheres in three. The average weight of six brains of maniacs, 2 lbs. 14 ozs. 6 drs.; of healthy brains, 2 lbs. 15 ozs. 1 dr.; in seven instances the liver is mentioned as usually small, and the spleen in six.

The greater number of these appearances are very commonly found in cases where there is no mental affection, such as injections, serous effusions, and opacity of the membranes, softening of the brain, &c., which depend very much on the disease immediately causing death, and the length of the time after death at which the body was examined. Even these changes, which have just been mentioned, so various and uncertain, can hardly be supposed to be the cause of insanity.

It seems to depend more on a disease of the mind than of the organic structure of the body. Of fifty-seven cases, ten died of phthisis, five from serous apoplexy, four with convulsions, two from erysipelas, one from enlargement of the glands of the neck, one from cancerous ulceration of the stomach, and in twenty-seven the cause of death is not known.

DIVISION 9.—EGYPTIAN.

There are eleven skulls, and two mummies' heads: the skulls of mummies in the collection have the oval figure which prevails among Europeans. The crania are all well formed; the temporal ridges are very extensive, and situated high on the skull; the forehead is high and smooth, and generally without any marked superciliary ridges; the nasal bones are high and well arched, and the upper jaw straight; the teeth are all flat, and smooth on the summit; the incisors are small, thick, and round, not, as usual, flattened with sharp edges, but resembling truncated cones; the cuspidati are not pointed, but broad and flat like the neighbouring bicuspidati: this is attributed to mechanical attrition, depending on the nature of the food which the teeth were employed in masticating; the meatus auditorius is not placed higher on the head, but it is situated on the same plane with the base of the nose; the bones are firm and dense, but not more than in other races, and the proportionate weight of the crania is not greater. The hair was not woolly in any of the heads when brought here as mummies; it was fine, and disposed to be curled and frizzled. No. 208 approximated in some degree to the Negro, by having the alveolar processes of the superior maxillary bone broad in front, and projecting, and the ridge for the attachment of the temporal muscle extensive, and high on the head; the nasal bones are, however, high and well arched; the anterior nasal aperture is of the European form. Wormian bones were found in the occipital suture in three; and in the temporal and sphenoid suture in three instances. The occipital foramen was large in one, and small in three.

No. 205.—Cranium large and well formed; forehead high, smooth, and well arched; posterior part of head large; ridges for the attachment of the temporal muscle situated high on the skull, ascending to the parietal protuberance; the alveolar processes are absorbed.—*Donor, Dr. Mahony, D. I. G.*

No. 206.—Cranium well formed; forehead high and well arched; parietal protuberance and occiput prominent; ridge for attachment of the temporal muscle high on the head; alveolar process of the superior maxillary bone large, broad in front, and slightly projecting; nasal bones not highly arched.—*Same Donor.*

DIVISION 10.—BALUCHI AND AFGHANS.

The skulls of Baluchi and Afghans are large, and are very good specimens of the oval-shaped skulls, and resemble the best-formed Greek or European. They are generally of an oval or round figure; the forehead and vertex is high and well arched; the occiput is well rounded, and the space for the downward development of the brain is considerable; the superciliary ridge is well marked, and in many of them is prominent; the ridge for the attachment of the temporal muscle is situated high on the head in some of them, but not more than in Europeans; the nasal bones are high and well arched; and the alveolar processes of the upper jaw are perpendicular; the anterior nasal aperture is of the European form. In Nos. 220 and 229 it is rather large and wide; the teeth are sound, regular, and beautifully white. No. 228 is peculiarly formed, and bears some distant resemblance to the skull of the flat-headed American Indians. The bones are hard, of fine texture, thin and transparent. Wormian bones were found in the occipital suture in four, and in the temporal and sphenoid suture in two. The occipital foramen was small in three. There was a suture in the centre of the frontal bone in two.

No. 219.—Skull of an Afghan, killed at the attack upon Candahar, on the 11th of March, 1842. Cranium large, oval, and beautifully formed; forehead high and well arched.—*Donor, Dr. McAndrew, Surgeon, 40th Regiment.*

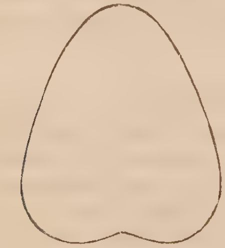
No. 220. Skull of an Afghan peasant, killed in action on the 11th of March, 1842, at Candahar.—Cranium well formed: forehead rather low and receding; superciliary ridge prominent; a very distinct groove running into the lachrymal canal on the nasal process of the superior maxillary bone; anterior nasal aperture of considerable width; and the alveolar processes are broad in front, and slightly everted.—*Same Donor.*

No. 228. Skull of an inhabitant of Candahar, killed in action near Candahar.—Forehead broad, flat, and receding gradually upwards towards the vertex, which is also broad and flat; the occiput is likewise broad, flat, and perpendicular, giving it something of the appearance of the flat-headed American Indians, although in a much less degree.—*Same Donor.*

No. 229. Skull of a Mogul, killed in action near Candahar, March 8, 1842.—Cranium large and well formed; superciliary ridge prominent, and a depression at the junction of the frontal and nasal bones; a suture in the centre of the frontal bone; anterior nasal aperture large.—*Same Donor.*

DIVISION 11.—EAST INDIANS.

There are twenty-five crania of the different races and casts from the Indian peninsula. They are not so well formed nor such fine skulls as the Afghans. The cranium is of an oval form, rather narrow compared with the longitudinal diameter, which is frequently very great; the forehead is small and not much expanded; the posterior part of the skull is large, and the occiput prominent; the space for the downward development of the brain is of moderate extent; the ridge for the attachment of the temporal muscles is not, in general, strongly marked; the superciliary ridge is generally marked, but not prominent; the bones of the face are rather small; the nasal bones are arched, but not so highly as in Europeans; the alveolar processes are usually straight, but in some skulls they are somewhat everted and projecting; the anterior nasal aperture is generally of the European form. In No. 233, however, it is of the form represented, and also in No. 248, but this last is an exception. The teeth are sound and regular, and their surfaces worn down; Wormian bones were found in eleven instances out of the twenty-five in the occipital sutures; in the temporal and sphenoid suture in three instances; in two the sphenoid was entirely cut off from the parietal by a process of the temporal bone; the lachrymal canal was formed entirely on the nasal process of the superior maxillary bone in one; the occipital foramen was large in one, and small in five.



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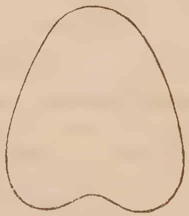

No. 248.

No. 233. Skull of a Brahmin.—Forehead smooth, low, and narrow, and without any superciliary ridge; occiput prominent.—*Donor, Dr. Brown, D. I. G.*

No. 239. Skull of a Hindoo.—Cranium small and well formed; forehead high and well arched; occiput prominent; large ossa triquetra in temporal and sphenoid sutures; alveolar processes of superior maxillary bone projecting; teeth coated with a black incrustation.—*Same Donor.*

No. 248. Skull of a Moorman.—Cranium oval and well formed; nasal bones flat and on the same plane, with considerable breadth between the eyes; alveolar processes rather everted and long; numerous ossa triquetra at the superior angle of the occipital bone; sphenoid entirely out from the parietal by a process of the temporal bone; anterior nasal aperture wide, and approaching to the Negro form (see illustration).—*Same Donor.*

No. 251. Skull of a female Pariah, lowest caste.—Cranium narrow and flattened laterally; forehead high, but narrow; orbits small and contracted; external pterygoid process large; superciliary ridge not marked.—*Same Donor.*

No. 257. Skull of Kahan Mahan, a notorious Thug, who had been engaged in at least sixty different murders. He died in the Thug gaol at Lucknow, East Indies, 1840, where he had been imprisoned five years; he was about sixty-five years of age, a good-looking man.—Cranium narrow; forehead low and receding; superciliary ridges prominent; ridge for the attachment of the temporal muscle very extensive and well marked; occiput prominent; the bones are dense, thin, and transparent. *Donor, Dr. Menzies, 2nd Class S. S.*

DIVISION 12.—SINGALESE.

There are five crania from Ceylon. The cranium is of an oval form; the forehead is low and retreating; the vertex and occiput are well rounded; the space for the downward development of the brain is of moderate extent; the ridge for the attachment of the temporal muscle is not extensive nor strongly marked, except in No. 258; the superciliary ridge is well marked; the nasal bones are well arched; the alveolar processes are generally straight, but project somewhat in No. 258 and No. 260; the anterior nasal aperture is of the European form; Wormian bones were found in the occipital suture in two instances, in one of which they were of large size, cutting off the superior angle of the occipital bone; these bones were also found in the temporal and sphenoid suture in one; the foramen magnum was small in one.

No. 258. Skull of a Singalese, aged 48. A native of the district of Galli Ceylon, who was executed for murder in October, 1836. His character was very bad, and all his acts were committed in the most concealed manner.—Forehead low and receding; posterior part of head rather large; alveolar processes of the superior maxillary bone large and projecting; a large os triquetrum in the temporal and sphenoid suture; ridge for the attachment of the temporal muscles extensive and well marked.—*Donor, Dr. Sillery, Surgeon, 35th Regiment.*

No. 260. Skull of a Singalese.—Forehead low and retreating; lachrymal canal large; alveolar processes of the superior maxillary bones rather long and projecting.—*Donor, Dr. Davy, A. I. H.*

CLASS II.—SKULLS WITH PROGNATHOUS JAWS; OR THE NASAL BONES FLAT, AND ON THE SAME PLANE.

The cranium or cavity destined to contain the brain is oval and well formed. The superior maxillary bones are somewhat lengthened, and project forward; the alveolar processes of both jaws are long, broad in front, everted, and projecting, more particularly those of the superior maxillary bone. The nasal bones are large, frequently oblong, and lie on the same plane; the nasal processes of the upper jaw are also large, which causes great breadth between the eyes. The anterior nasal aperture is large and wide, and of various forms, which differs in a remarkable manner from that of the oval-shaped skulls.

NEGROES FROM THE WEST COAST OF AFRICA.

The chief peculiarities in the general form of the strongly marked Negro skull are the great forward projection of the superior maxillary bones, particularly of the length, and eversion of the alveolar processes. In general the superior maxillary bone does not project, nor is the skull compressed laterally; this occurs only in the exaggerated specimens of the Negro race, and out of 128 African crania these strongly marked peculiarities are only found in two instances, viz., No. 329 and No. 377. With the exception of the Kroomen, and those already mentioned, the upper jaw does not project in front of the frontal bone; the alveolar processes alone project, and in some are only everted. The nasal bones are large, generally oblong, and lie on the same plane; the nasal processes of the superior maxillary are large and broad, causing great breadth between the eyes. The anterior nasal aperture is large and wide, and its angle rounded off. They vary in form, being in some of a rounded, in others of square form, and are very different from European.

In the European skulls the nasal bones are highly arched, and a very small portion only of the superior maxillary enters into the formation of the base of the anterior nasal aperture. But in the Negro, and in many other races, this aperture is generally very large inferiorly, and its two lower angles rounded off. The alveolar processes in them are large, projecting, broad in front, and form a larger segment of a circle. The size and

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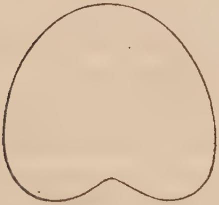

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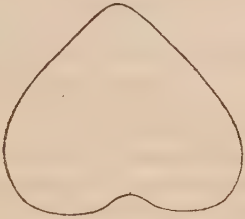
MANDINGO.



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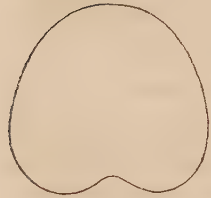

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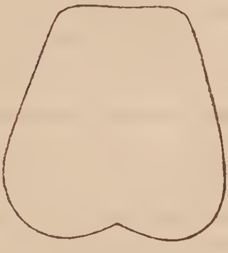
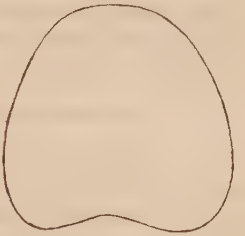


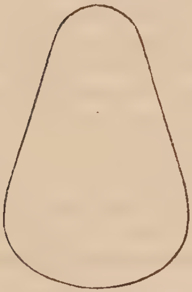
No. 348.

NEGRO.



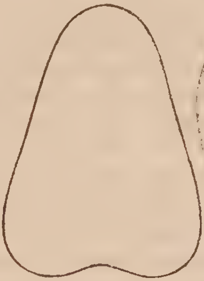
No. 371.

GRECIAN.



No. 4.

ENGLISH.



No. 89.

form of this aperture is produced by a larger portion of the superior maxillary entering into the formation of the base of the opening; the size and position of the nasal bones, which are almost always on the same plane; the large size of the nasal processes of the superior maxillary bones, and the great breadth between the eyes; thus giving a round or square form, or a form difficult to describe in words, to the opening, which differs very remarkably from the European.

The posterior nares are not generally large, but in some skulls the pterygoid processes stand farther apart, and are stronger, particularly the external pterygoid plate, which in many is broad, flat, and turned outwards.

The zygoma is of the usual size, and has the same direction as in the oval-shaped skulls; in some few instances they project forwards and downwards, but not outwards, as in the broad-faced crania.

The cranium is of an oval form, and not compressed laterally; the forepart of the head is small, compared to the posterior. The forehead is high and well arched, smooth, and without any marked superciliary ridge; the frontal sinuses are very small, or almost absent. The ridge for the attachment of the temporal muscle is very generally of small extent, and not well marked, as also those on the occiput. The orbits are in general larger, more capacious, and of a circular or square form; but in some they are smaller.

Wormian or triquetral bones are as frequent in Negro as in European crania. Out of 128 Negro skulls, these bones were found in seventy-two instances in the occipital suture; and in twelve additional instances, one, sometimes two, or even more, very large ossa triquetra at the superior angle of the occipital bone, occasionally dividing it into parts, or cutting off its superior angle.

In the same number of Negro skulls, small Wormian bones were found in the temporal and sphenoid suture in ten instances.

The sphenoid was entirely cut off from the parietal bone, by a process of the temporal bone, in thirteen out of 128, but in the greater number the sphenoid joins the parietal bone to a greater or less extent, and frequently for the space of a quarter of an inch.

The lachrymal canal is in general very large, and the depression on the lachrymal bone for the lachrymal sac is frequently very small.

In the 128 skulls the lachrymal groove was formed entirely on the nasal process of the superior maxillary in eleven instances, and in some instances the lachrymal bone was very small, or almost absent.

The occipital foramen is generally of the usual size, but in thirteen instances it was thought to be small, and in five large, in proportion to the size of the cranium. The position of the foramen magnum was found to be exactly behind the transverse lines bisecting the antero-posterior diameter of the base of the cranium, which is the position in European skulls. In those Negro skulls which have the alveolar processes long and projecting, the anterior half of the line is lengthened in some degree, but if allowance is made for it, there is no perceptible difference. The situation of the foramen magnum is, therefore, the same in Negro as in European skulls.

The external meatus is not larger, nor in any way different from Europeans.

The mastoid and styloid processes are in general of moderate size, in some small, and in others large, but there is nothing constant in this respect. In none of the Negro skulls was there the slightest trace of a suture resembling an intermaxillary bone. The infra-orbital canal was found in some skulls rather larger than in European, in others smaller, but generally about the same size; the different foramina for the transmission of nerves likewise varied in size, but there was nothing constant in this respect.

The lower jaw is in general neither thicker nor stronger, and the angle is the same as in Europeans; the part covered by the masseter muscle is not large and rough.

The teeth are generally strong, thick, and sound, and the incisors long and sharp. The number of the teeth is the same as in Europeans; in two skulls, No. 321 and No. 352, there are eighteen teeth in the upper jaw; the supernumerary tooth is a bicuspidate, which has partly descended, but there is not space enough in the alveoli, and the teeth are there partially displaced. In No. 348 there are nine teeth in the left superior maxillary bone, and eight in the right; and the teeth of both sides are quite regular, and not displaced. The sockets for the teeth are generally very deep, ascending as high as the nasal aperture.

DIVISION 1.—MANDINGOES.

The Mandingo skulls are the best formed of the Negroes in the collection. Their skulls are large, oval, and capacious; in No. 263, the breadth between the eyes, the flattening of the nasal bones, and the form of the anterior nasal aperture, are the only Negro characters; No. 266 resembled a European skull in every particular, with the exception of the alveolar processes being slightly everted. No. 264, with 285, are the only instances in which the teeth are not sound or are displaced from their sockets. Wormian bones were found in two instances. In two the lachrymal groove was formed entirely on the nasal process of the superior maxillary bone; and in two the occipital foramen was small.

No. 263. A Mandingo-man's skull.—This skull does not display much of the negro peculiarities. The cranium is of an oval form; the forepart of the head is rather small compared to the posterior, but the forehead is arched, and nearly perpendicular with the bones of the face. The ridge for the insertion of the temporal muscle is rather extensive and well-marked. The nasal processes of the superior maxillary bone are large, and the nasal bones are nearly on the same plane, and form a smooth continuous surface with the forehead. The alveolar processes have a circular sweep, but they do not project. The lachrymal canal is rather large, and formed entirely on the nasal process of the superior maxillary.—*Donor, R. Clarke, Esq., Surgeon.*

No. 264. A Mandingo-man's skull.—Cranium large and well formed; forehead straight and well arched; superciliary ridge marked. Nasal processes of the superior maxillary bones large and flat, and the two from the opposite sides join at the frontal bone, so as to exclude the nasal bones from the frontal. The alveolar processes of the superior maxillary bones are very large and projecting. The teeth are very irregular in their sockets, which are very deep; the surfaces of the molar teeth are worn down to the fangs on their outer side, and those of the lower jaw are displaced inwards. The ramus of the lower jaw is very broad and expanded.—*Same Donor.*

No. 266. A Mandingo-man's skull.—The cranium is oval and well formed, and has very little of the Negro peculiarities. Ridge for the insertion of the temporal muscle strongly marked immediately above the mastoid process. The nasal bones are prominent and arched; the alveolar processes are very slightly everted.

DIVISION 2.—IOLOFS.

The skull is large, oval, and well formed. It has the Negro character in the position of the alveolar processes, and the nasal bones, and the form of the anterior nasal aperture.

No. 267. Skull of an Iolof-woman.—Cranium large, oval, and well formed; nasal bones large and slightly flattened; alveolar processes project, and are partially absorbed from advanced age, the teeth having dropped out; lachrymal canal of large size.—*Donor, R. Clarke, Esq., Surgeon.*

DIVISION 3.—TIMMANIS.

These three skulls are large and capacious. No. 268 is compressed laterally, and there is a bulging in the temporal region. The cranium of No. 269 is beautifully arched, but the Negro peculiarities are strongly marked in the breadth and flatness between the eyes, the form of the anterior nasal aperture, and the projection of the alveolar processes.

Ossa triquetra were found in the three Timmanis' skulls in the occipital suture; in one they were large and numerous, in another a suture cut off the superior angle of the occipital bone. Wormian bones were found in one instance in the temporal and sphenoid suture.

No. 268. A Timmanis-woman's skull. — Cranium compressed laterally, and bulging into the region of the temporal bone; no ridge for the insertion of the temporal muscles; forehead and vertex high; nasal bones high and arched; bones of the face small; alveolar processes projecting; orbital plate of the frontal bone arborescent, and shows marks of vascularity; the coronal and sagittal sutures are obliterated; the occipital bone has not a sharp angle, but forms almost a straight line across the head at its superior part; lower jaw thick and rounded, and its angle obtuse.—*Donor, R. Clark, Esq., Surgeon.*

No. 269. A Timmanis-woman's skull.—Cranium large and well formed; the forehead is broad, high, smooth, and well arched; the occiput is rather prominent, there are numerous large ossa triquetra in both sides of the occipital suture, and one between the sphenoid and parietal bones; there is great breadth between the eyes, and the nasal bones are on the same plane; the alveolar processes are long and very projecting; the orbits are small, and the orbital plate of the frontal bone shows marks of vascularity.—*Donor, R. Clark, Esq., Surgeon.*

DIVISION 4.—SOSSOO, OR SUSUS.

These two crania are oval and well formed, and the bones are of fine texture. They have the Negro peculiarities, but not strongly marked. No. 272 has them only in a slight degree.

Wormian bones were found in the occipital suture in one instance, and in the temporal and sphenoid suture in one. The foramen magnum is small in one.

No. 272. Skull of a Sossoo boy.—Cranium of an oval form, and well formed, and has few of the Negro characters; ridge for the insertion of the temporal muscle of small extent, and not well marked; one os triquetrum between the sphenoid and parietal bones; nasal bones oblong, and on the same plane; alveolar processes project; lachrymal canal is large.—*Donor, R. Clarke, Esq., Surgeon.*

DIVISION 5.—KASSO.

These three skulls are oval and well formed. Two are from young subjects, and in them the mastoid processes are small, and the space for the downward development of the cerebellum is rather great. The alveolar processes project, but not to a great degree. The nasal bones are oblong, and on the same plane in No. 273 and No. 274. In No. 275 the superciliary ridge is marked, and the nasal bones are arched. Ossa triquetra were found in the three skulls; in one they were very large and numerous. In one the sphenoid was entirely cut off from the parietal by a process of the temporal bone. Foramen magnum large in one.

No. 273. Skull of a Kasso or Cassoo girl.—Cranium of an oval form; forepart of the head small compared to the posterior; forehead high, and nearly perpendicular with the bones of the face; insertion of the temporal muscle of small extent, and not well defined, as also those on the occiput; parietal protuberance prominent; several large ossa triquetra; sphenoid bone entirely cut off from the parietal by a process of the temporal bone; mastoid processes very small, and the skull, when placed on its base, does not rest on these processes, but on the occipital bone; great breadth between the eyes; nasal bones flat; alveolar processes projecting; the lateral part of the ramus of the lower jaw is very small and narrow, and the angle obtuse; socket for the teeth of great depth.—*Donor, R. Clarke, Esq., Surgeon.*

No. 274. Skull of a Kasso, or Cassoo boy.—Cranium compressed laterally; forepart of head small compared to the posterior; forehead high and smooth, and nearly perpendicular with the bones of the face; space for insertion of the temporal muscle of small extent, and not well marked, as also those for the muscles on the occiput; eighteen large ossa triquetra in the occipital suture; zygomatic arch small; mastoid processes very small, and the skull when placed on its base, does not rest on these processes, but on the occipital bone; nasal bones elevated and slightly arched, but rather broad; alveolar processes project; angle of the lower jaw obtuse.—*Donor, R. Clarke, Esq., Surgeon.*

No. 275. Skull of a Kasso, or Cassoo man.—Cranium large and well formed; forehead broad and high; superciliary ridge slightly marked; occiput prominent; no marked insertion for the temporal or other muscles; considerable breadth between the eyes, but the nasal bones are arched; the alveolar processes seem to have projected, but they are partly absorbed and destroyed; lachrymal canal of large size.

DIVISION 6.—KROOMEN.

These five skulls display the Negro peculiarities in a high degree. The superior maxillary bone projects very much, and likewise the alveolar processes, which are very long. The breadth between the eyes is great, and the nasal bones are on the same plane, with the exception of No. 276, which are arched, and the superciliary ridge prominent. No. 277 is an exaggerated specimen of the Negro. No. 280 is of a peculiar square form. None of these skulls are, however, compressed laterally. Wormian bones were found in three instances in the occipital suture, in one of which there were three large bones cutting off the superior angle of the occipital. In one the sphenoid was entirely cut off from the parietal by a process of the temporal bone. In one there was a suture in the centre of the frontal.

No. 276. Skull of a Krooman, Samuel Williams, aged 26, who died of dysentery; was engaged in the slave trade as a labourer, and bore a good character.—Cranium large, oval, and the longitudinal diameter considerable, but not compressed laterally; forehead large and high; superciliary ridge marked, and a depression at the junction of the frontal and nasal bones —vertex flat; a suture in the centre of the frontal bone; nasal bones high and arched; alveolar processes very long and projecting, and of great depth from the crown of the teeth to the palate; lachrymal canal of large size; external plate of the pterygoid large; styloid process long and strong; the anterior part of the ramus of the lower jaw is of great depth.—*Donor, R. Clarke, Esq., Surgeon.*

No. 277. Skull of a Kroo boy.—Cranium compressed laterally; forepart of the cranium small and narrow compared to the posterior; insertion of the temporal muscles of small extent, and not well marked, as also those on the occiput; mastoid processes very small; considerable breadth between the eyes, and the nasal bones are on the same plane; alveolar processes projecting; the first set of teeth have not been shed; the permanent teeth are seen descending.—*Same Donor.*

No. 280. Skull of a Krooman. — Cranium of a square shape; vertex broad and flat, and a depression along the sagittal suture, separating the parietal protuberances; forehead high, broad, and well arched; sphenoid cut off from the parietal by a process of the temporal bone; considerable breadth between the eyes; nasal bones somewhat flattened; alveolar processes very long and projecting; lachrymal canal very large; styloid processes strong, and of considerable strength.—*Same Donor.*

DIVISION 7.—HAUSA.

This skull shows the Negro characters usually found in skulls of young subjects.

No. 281. Skull of a Hausa boy.—Cranium narrow; the forepart of the head is small compared to the posterior; a projecting angle on the centre of the frontal bone; ridges for the insertion of muscles not marked; nasal bones oblong, and on the same plane; alveolar processes projecting; lachrymal canal large.—*Donor, R. Clarke, Esq., Surgeon.*

DIVISION 8.—FANTI.

This is a large, heavy, but well-formed skull, and the Negro peculiarities are strongly marked, but not in an exaggerated degree. There is a large os triquetrum cutting off the superior angle of the occipital bone.

No. 282. Skull of a Fanti. — Cranium large, oval, and well formed; forehead broad, and well arched; a very large os triquetrum cutting off the superior angle of the occipital bone; bones of the face large and broad; great breadth between the eyes, and the nasal bones are on the same plane; lachrymal canal very large; alveolar processes describe a large semicircle, and project considerably; pterygoid process large and strong, particularly the external plate; styloid process also large and strong.—*Donor, R. Clarke, Esq., Surgeon.*

DIVISION 9.—ATTAN, OR APPA.

These two skulls are large, well formed, and show the Negro peculiarities in a marked but not exaggerated degree, especially No. 283. In No. 284 the nasal bones are small and slightly arched, and the superciliary ridge marked. Wormian bones are found in the occipital suture of both.

No. 283. Skull of an Attan or Appa-man.—Cranium large and oval; forepart of the head rather small compared with the posterior; forehead broad, high, and well arched: great breadth between the eyes, and the nasal bones flat; bones of the face large, and the alveolar processes expanded and projecting; ossa triquetra in the occipital and mastoid sutures.—*Donor, R. Clarke, Esq., Surgeon.*

No. 284. Skull of an Attan or Appa-man.—Craniam oval and well formed, with very few of the Negro peculiarities; the forehead is broad, high, and well arched; ridges for the insertion of muscles not marked; nasal bones small and arched; alveolar processes project to a great extent.—*Same Donor.*

DIVISION 10.—PAPAS, OR MAHAI.

These three skulls are small, oval, and well formed, and have the Negro peculiarities in a marked degree. There are no marked ridges for the insertion of muscles; the nasal bones are oblong, and on the same plane in two, but in No. 286 they are arched; the alveolar processes are long and projecting; in one there are ossa Wormiana in the occipital suture.

No. 285. Skull of a Papas, Papaus, or Mahai girl.—Cranium small, oval, and not compressed laterally; forehead small, but arched, and nearly perpendicular with the bones of the face; ridges for the insertion of muscles of small extent, and not well marked; mastoid processes very small, and the skull, when placed on its base, does not rest on these processes, but in the condyles of the occipital bones; nasal bones large, oblong, and on the same plane, with great breadth between the eyes; alveolar processes everted and projecting; lachrymal canal of large size.—*Donor, R. Clarke, Esq., Surgeon.*

DIVISION 11.—BARCONKA, OR MOKA.

Of these two skulls, one of them, No. 289, displays scarcely any of the Negro peculiarities. No. 288 is of a peculiar form, and shows them to a great degree. Both skulls slope gradually, and become narrower from the occiput to the occipital foramen; ossa triquetra were found in the occipital and temporal sutures of both skulls; in the former they are very numerous.

No. 288. Skull of a Barconka, or Moka girl.—Cranium of a square form, and not compressed laterally; forehead large, broad, and high; vertex broad and flat; occiput prominent, and sloping to a narrow point towards the occipital foramen, giving a narrow, contracted appearance to the base of the skull; mastoid processes very small; an os triquetrum in the suture between the temporal, parietal, and sphenoid bones, which entirely cut off the latter bone from the parietal; ridges for the insertion of muscles of small extent, and not well marked; internal orbital angle of the frontal bone is large and broad, and descends for half an inch to meet the nasal bones, which are oblong, and on the same plane; zygomatic arch does not stand out from the head, but is small and flat; the bones of the face project very much, and the alveolar processes are long and projecting, but the superior maxillary bone is narrow.—*Donor, R. Clarke, Esq., Surgeon.*

No. 289. Skull of a Barconka, or Moka man.—Cranium oval and well formed; forehead large, broad, and high; the skull becomes slightly contracted from the occiput towards the occipital foramen; two ossa triquetra in the right, temporal and sphenoid sutures, and numerous ossa Wormiana in the occipital suture; nasal bones arched, and the alveolar processes do not project.—*Same Donor.*

DIVISION 12.—IBO.

These nine crania are all large, capacious, oval, and well formed, and the Negro characters are marked, but not in an exaggerated degree; the nasal bones are oblong, and on the same plane; the alveolar processes are prominent, but do not project very much; the anterior nasal aperture is of the peculiar form already mentioned. No. 291 has the superciliary ridge very prominent, which is very rare in a Negro skull. No. 293 is very large, heavy, and the bones are of great thickness; ossa triquetra were found in four instances in the occipital suture; in two, the sphenoid was entirely cut off from the parietal by a process of the temporal bone; in one, there is a suture in the centre of the frontal bone; in one, the occipital foramen was large.

No. 291. Skull of an Ibo-man.—Cranium large, and of an oval form; forehead broad, and slightly retreating; superciliary ridges very prominent; vertex broad and arched; great breadth between the eyes, and the nasal bones flat; face broad, but rather sharp; alveolar processes do not project; pterygoid processes large and strong, especially the external pterygoid plate; lachrymal canal of large size.—*Donor, R. Clarke, Esq., Surgeon.*

No. 293. Skull of an Ibo, a notorious thief.—Cranium large, and of an oval form; forehead broad, high, and slightly retreating; posterior part of head large; mastoid processes large and strong; bones of the face broad and flat; great breadth between the eyes, and the nasal bones are oblong, and on the same plane; lachrymal canal of large size; alveolar processes project; external pterygoid plate large and broad, and turned outwards; styloid processes long and strong; lower jaw broad and thick. This skull is of great weight, viz., 1 lb. 11 oz. 3 drs. —*Donor, Dr. Foulis, Assistant Staff Surgeon.*

No. 299. Skull of an Ibo girl.—Cranium oval, and well formed; forehead high, and well arched; ridge for the insertion of muscles of small extent, and not well marked: nasal bones large, and on the same plane, with great breadth between the eyes; alveolar processes project slightly.—*Donor, R. Clarke, Esq., Surgeon.*

DIVISION 13.—ASHANTI.

Sixty-one skulls of Ashantis are in the collection. The great similarity between the whole of these crania is most remarkable: the cranium is of a moderate size, oval and well formed; the bones of the face are likewise of a proportionate size, and do not project; the frontal bone is frequently perpendicular with the bones of the face; they display the Negro peculiarities in having the nasal bones oblong and in the same plane, the breadth between the eyes, the form of the anterior nasal aperture, which is generally that of No. 343, and the projection of the alveolar processes. These characters are marked, but are not in an exaggerated form. The alveolar processes are frequently broad in front, and do not project; but the position of the socket of the teeth causes the teeth to project. No. 322 has the nasal bones highly arched, and the alveolar processes do not project: this skull is of a rounder form than the others. No. 329 shows the Negro characters in a high degree, and is one of the worst formed skulls in the collection: the forehead is small, low, and receding; the maxillary bones project very much, as also the alveolar processes; the lachrymal canal is formed entirely on the nasal process of the superior maxillary bone. Ossa triquetra were found in the occipital suture in thirty-seven instances; and in two additional instances large Wormian bones cut off the superior angle of the occipital bone; these bones were also found in the temporal and sphenoid suture in four; the sphenoid was entirely cut off from the parietal, by a process of the temporal bone, in six; the lachrymal groove was formed entirely on the nasal process of the superior maxillary in nine; the foramen magnum was small in four, and large in two; a suture in the centre of the frontal bone in one.

No. 322.—Cranium of an oval form, and shows more of the Negro peculiarities; forehead rather low and receding; nasal bones very high and well arched; alveolar processes are straight, and do not project.—*Donor, Michael Sweeny, Esq., Staff Surgeon.*

No. 329.—Forehead very narrow and receding, and small compared to the posterior part; superior maxillary bones project; nasal bones slightly arched; alveolar processes projecting; lachrymal canal very large, and formed entirely on the nasal process of the superior maxillary bone; lachrymal bones very small; orbits contracted.—*Same Donor.*

No. 343.—Cranium of an oval form; occiput projects; the forehead is high, well arched, and nearly perpendicular with the bones of the face; the transverse diameter is greater immediately above the mastoid process than at the parietal protuberances; ridges for the insertion of muscles not marked; great breadth between the eyes; the nasal bones are large, oblong, and on the same plane; the alveolar processes project very slightly.—*Same Donor.*

No. 348.—Cranium large, oval, and well formed; nasal bones oblong, and on the same plane; alveolar processes long and projecting; styloid processes long, and of great strength; lachrymal canal of large size.—*Same Donor.*

DIVISION 14.—COLABAR.

These four skulls are oval, capacious, and well formed; they show the Negro characters, but not strongly marked. No. 361 has the nasal bones arched; in No. 362 the skull is of a square form; the superciliary ridge marked; and the alveolar processes are long, but they do not project to a great extent. Wormian bones were found in each skull; in one skull there are two of large size, cutting off the superior angle of the occipital bone; triquetral bones also exist in the temporal and sphenoid suture in one; the sphenoid is entirely cut off from the parietal by a process of the temporal bone in one.

No. 361. Skull of a Colabar-man, aged 36, who died of dysentery.—Cranium oval and well formed; forehead high and well arched, but narrow; left wing of the sphenoid entirely cut off from the parietal by a process of the temporal bone; breadth between the eyes not great, and the nasal bones are arched; alveolar processes very long and projecting; styloid process very long and strong.

No. 362. Skull of a Colabar or Karaba-man, who died of dysentery.—Cranium large, and of a square form; forehead high, broad, and arched; posterior part of skull large; two very large ossa triquetra cutting of the superior angle of the occipital bone; a depression at the junction of the frontal and nasal bones; considerable breadth between the eyes; nasal bones small, and on the same plane; alveolar processes very long and projecting; lachrymal canal of a large size.

DIVISION 15.—KAUNGA.

These three skulls are oval and well formed; they have the Negro characters in the nasal bones being on the same plane, and in the form of the anterior nasal aperture; the alveolar processes project, though not to a great extent. No. 367 has the frontal bone nearly perpendicular with the bones of the face.

No. 365 has the superciliary ridge prominent; Wormian bones were found in three instances in the occipital suture; and in one in the temporal and sphenoid suture.

No. 365. Skull of a Kaunga-man.—Cranium oval; forehead low, narrow, and retreating; superciliary ridge prominent; considerable breadth between the eyes; nasal bones oblong, and on the same plane; alveolar processes long and projecting.

No. 367. Skull of a Kaunga-woman. Cranium long and rather narrow; forehead low; an os triquetrum in the temporal and sphenoid suture; considerable breadth between the eyes; the superior half of the nasal bones are on the same plane, and the inferior half somewhat arched; alveolar processes long and projecting.

DIVISION 16.—CONGO.

These three skulls are of small size, of a round or oval form, and have few of the Negro characters; neither the superior maxillary bone nor the alveolar processes project; the nasal bones are on the same plane, and in one skull they are of an oblong form; this, with the form of the anterior nasal aperture, are almost the only points of resemblance to the Negro. The skulls are of light weight; bones thin and transparent, and of a fine texture; the bones of the face are of small size; in No. 369 the nasal bones are small and slightly arched; there is a bulging in the temporal region in all of them, and likewise in the occipital region for the downward development of the cerebellum; the mastoid processes are small in the two from young subjects; Wormian bones are found in two instances in the occipital suture.

No. 368. Skull of a Congo boy, aged thirteen years.—Cranium small; forehead and vertex high and well arched; a bulging over the temporal region; occiput broad, high, and almost perpendicular from the vertex to the occipital foramen; the two sides of the occiput are not symmetrical, the left side being more flattened than the right; the bones of the face are of small size; considerable breadth between the eyes; nasal bones oblong and on the same plane; the alveolar processes slightly everted; the permanent cuspidate tooth of the upper jaw has not descended, and is seen lying in a cavity immediately below and to the outer side of the nasal aperture.

No. 369. Skull of a Congo-woman.—Cranium small, oval, and well formed; bones of the face small; breadth between the eyes not great; nasal bones small, and slightly arched; alveolar processes everted.

DIVISION 17.—MISCELLANEOUS AFRICANS.

These twenty skulls of Negroes from the west coast of Africa display in each great variety as to form: some approach very near to the European, such as Nos. 372, 373, 374, 382, 384, &c., which have the nasal bones more or less arched, and the alveolar processes do not project to a great degree. No. 377 displays the Negro peculiarities in an exaggerated degree. This skull, with No. 329, an Ashanti already mentioned, are very much alike, and are the only skulls which are compressed laterally to a great extent. No. 376 is of a peculiar rounded form, with a bulging in the temporal region; the superciliary ridges are prominent; the nasal bones very highly arched; and the alveolar processes perpendicular. Wormian bones were found in ten instances in the occipital suture; and in four additional instances they were of large size, cutting off the superior angle of the occipital bone; the sphenoid was entirely cut off from the parietal by a process of the temporal bone in two; in one there was a suture in the frontal bone; the occipital foramen was small in six, and large in one.

No. 371. Skull belonging to a complete skeleton of an African Negro.—Cranium large and oval; forehead broad and well arched, but small compared to the posterior part of the skull; ridge for the insertion of the temporal muscle well marked, and situated high on the head; superciliary ridge rather prominent, and a depression at the junction of the frontal and nasal bones; breadth between the eyes not great; nasal bones oblong, and on the same plane; alveolar processes very long and projecting; lachrymal canal of large size.

No. 372.—Cranium large, oval, and well formed, and displays few of the Negro peculiarities; ridge for the insertion of the temporal muscles ascends rather high on the head, and those on the occiput are well marked; nasal bones high and arched, and the breadth between the eyes is not great; the alveolar processes project slightly.

No. 373.—Cranium oval; forehead arched, but small compared to the posterior part of the skull; a suture in the centre of the frontal bone; two large ossa triquetra at the superior angle of the occipital bone; considerable breadth between the eyes; nasal bones slightly arched; malar bones large; alveolar processes project very much; external plate of the pterygoid process broad; styloid process long.

No. 374.—Cranium oval and well formed, and display few of the Negro peculiarities; the forehead is high, well arched, and nearly perpendicular with the bones of the face; the nasal bones are arched, and the alveolar processes do not project; styloid process strong.

No. 377. This is an exaggerated specimen of the Negro skull, and displays all their peculiarities in a high degree; it is the worst-formed skull in this section.—The cranium is compressed laterally; the forehead is low, very narrow, and retreating, and small compared to the posterior part of the skull; the ridges for the insertion of the temporal and other muscles are of small extent, and not well marked; the left wing of the sphenoid is entirely cut off from the parietal by a process of the temporal bone; the bones of the face project; considerable breadth between the eyes; nasal bones oblong, and nearly on the same plane; alveolar processes long and projecting; lachrymal canal large.

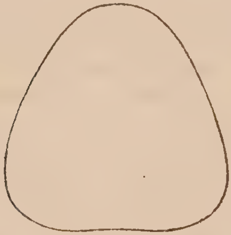
No. 382.—Cranium oval, and shows few of the Negro peculiarities; forehead broad, but low, and nearly perpendicular with the bones of the face; breadth between the eyes is not great, and the nasal bones are somewhat arched; the alveolar processes project; the lachrymal is large.

No. 384.—Cranium oval and well formed; forehead rather small compared to the posterior part of the skull; sphenoid entirely cut off from the parietal by a process of the temporal bone; superciliary ridge prominent, and a depression at the junction of the frontal and nasal bones, which are partially destroyed; the alveolar processes are long and projecting; the lachrymal canal is of large size.

No. 390. Skull of an African idiot, a native of the Pappau country.—He was quiet and inoffensive, and was always employed as a pioneer in cleaning the barrack-yard, at which work he did as much as three men; always talking to himself, and when interrupted would fly into a rage, and state that his father was a general in Guinea, with many other assertions of his native importance. He died of cholera.—Cranium very large, of great weight, and the bones are very thick; the skull is oval, and not badly formed; the forehead broad, arched, but low; the bones of the face are very large, and of great breadth; the breadth between the eyes is very great, being nearly an inch and a half; the nasal bones are on the same plane; the alveolar processes are long and thick, describe a large semicircle, but do not project; the lachrymal canal is large; the mastoid and pterygoid processes are strong; the lower jaw is very thick and strong.—*Donor, Dr. Rhyes, Surgeon, 3rd West India Regiment.*

DIVISION 18.—KAFFIR.

There are fifteen skulls of Kaffirs in the collection. The greater number of the Kaffir skulls have characters peculiar to themselves, which seem to be intermediate between the Negro and the European; they have not the least resemblance to the Hottentot or Bushman. The skulls are large, oval, and capacious, and well formed. The forehead is broad, high, and well arched, as also the vertex. In some skulls, such as Nos. 393, 394, and 396, there is a ridge along the sagittal suture, and a shelving on each side. The occiput is well rounded, and frequently prominent. The ridge for the attachment of the temporal muscle is extensive and strongly marked in some skulls, and in others not. The superciliary ridge is always marked, although not prominent, except in No. 394. The nasal bones are of moderate size, and arched, although not in general so highly as in Europeans; this, with the nasal process of the superior maxillary bone being somewhat large, makes the distance between the eyes to be greater than in Europeans. The anterior nasal aperture is large and wide at its inferior part, having in some skulls a resemblance to that of the Negro, as in Nos. 395 and 407. The margins of the lower angles of the aperture are not sharp, as in the European skull, but are smooth and rounded off in many of them, especially in Nos. 395 and 407. In Nos. 398 and 400 it is almost entirely of the European form, but there is some doubt as to whether these two are really Kaffir skulls. The alveolar processes of the upper jaw are large, broad in front, and describe a large segment of a circle, but they do not generally project; in Nos. 393 and 401 they project to a great degree. In Nos. 393, 394, 395, 396, 403, 406, and 407, the malar bones stand outwards, and



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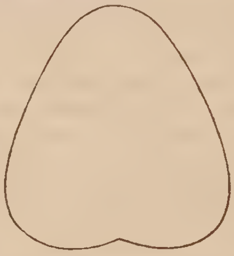
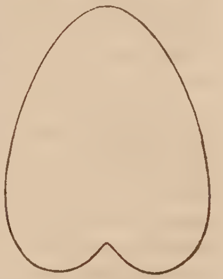


No. 407.



No. 400.

the zygomatic arch is large, and has a sweep in the same direction. But in other skulls this peculiarity is not observed, nor is it strongly marked in some of those mentioned. The face is in some broad, but not flat. The space for the downward development of the brain is of moderate extent, and the base of the skull presents nothing remarkable. In some the foramen ovale is larger than usual, but this is also sometimes seen in European skulls. The bones of the skull are thin and transparent, and of fine texture, and at the same time dense and hard. No. 395 is white and polished, resembling ivory. The lower jaw is thick and strong, but not more than in proportion to the size of the skull. The teeth are sound and well set. In the greater number of the skulls the incisor teeth are wanting. In four of the Tambuki Kaffirs they are worn down on the inner surface, and are not so sharpened at the point as in European skulls. In No. 407 the incisor teeth are short, thick, round, and truncated, their surface being much worn down, as likewise the molar teeth. In several of the skulls the sockets for the incisors are deep, and strongly marked on the surface of the alveolar processes.

The characters of the Kaffir skull are most strongly displayed in the skulls of the Tambuki Kaffirs, and they resemble each other much; from 393 up to 397 they are very similar, as also 399, 401, 403, 405, 406, and 407, and show the characters more or less above mentioned.

Some of the skulls, as Nos. 398, 400, 402, and 404, display the European characters in every particular; some even resemble the best-formed Greek skulls.

Out of fifteen Kaffir skulls Wormian bones were found in the occipital suture in eight instances, and in the temporal and sphenoid suture in two instances. The lachrymal canal is generally of large size, and in one instance it was formed entirely on the nasal process of the superior maxillary bone. The foramen magnum was thought to be rather large in two, and rather small in two instances.

TAMBUKI TRIBE.

No. 393. Skull of a Tambuki Kaffir. — Cranium large, oval, and capacious; the forehead is well arched; the head is rather narrow and somewhat compressed towards the summit, having a ridge along the vertex; the longitudinal is rather greater in proportion to the parietal diameter, and the occiput is prominent; the ridge for the insertion of the temporal muscle, and those on the occiput, are not of great extent, nor strongly marked; the superciliary ridge is marked; the nasal bones are arched, but not highly; the malar bones are of moderate size, and stand somewhat outwards, the zygomatic arch is large, and has a sweep in the same direction; the superior maxillary bones do not project, but the alveolar processes are somewhat prominent and everted; the lachrymal canal is rather large; the lower jaw is of a size in proportion to the skull; the teeth are sound and regular.—*Donor, Dr. Gibb, A. S. Staff.*

No. 394. Skull of a Tambuki Kaffir.—Cranium large and capacious; forehead low, retreating very much, and small compared to the posterior part of the skull; longitudinal and parietal diameters are proportionally large; the skull is narrow towards the vertex, having a ridge along the sagittal suture; the ridge for the insertion of the temporal muscle is high on the head, and well marked, as likewise those on the occiput, which is prominent; the superciliary ridge is very prominent, and there is a depression at the junction of the frontal and nasal bones; the coronal and sagittal sutures are obliterated; the malar bone and zygoma are large and strong, and stand outwards; the nasal bones are small, triangular, and somewhat arched; the alveolar processes project slightly, and the sockets for the teeth are deep and strongly marked on the external side of the alveolar processes; the teeth are all sound, white, and regular; the lower jaw is strong and deep; the lachrymal canal is of moderate size, and formed entirely on the nasal process of the superior maxillary bone.—*Same Donor.*

No. 395. Skull of a Tambuki Kaffir.—This skull is large, oval, capacious, and beautifully formed, and resembles an European skull in almost every particular; the forehead is very high, and remarkably well arched; the insertion of the temporal muscle is extensive, and the ridges on the occiput are not very strongly marked; the superciliary ridge is marked; the nasal bones are oblong, and somewhat arched, and the breadth between the eyes is larger than in Europeon skulls; the malar bone stands outwards, and the zygomatic arch is large, and has a sweep in the same direction; the alveolar processes are of moderate size, and do not project; the teeth are strong, regular, and remarkably sound; the lower jaw is strong and thick; the lachrymal canal is of large size; the bones of the skull have a polished appearance, resembling ivory, and are hard and transparent.—*Same Donor.*

No. 396. Skull of a Tambuki Kaffir.—Cranium large, oval, and capacious; forehead well arched; skull becoming narrow towards the vertex, where there is a ridge along the sagittal suture; the occiput is prominent; the ridge for the insertion of the temporal muscle is extensive; the superciliary ridge is marked; the face is broad, but not flat; the malar bone stands outwards, and the zygomatic arch is large, and has a sweep in the same direction; the nasal bones are small, and slightly arched; the alveolar processes of the upper jaw are long and projecting; the anterior nasal aperture is wide, and of the form given above; the lachrymal canal is of large size; the lower jaw is thick, strong, and deep; the teeth are regular and sound; the skull is heavy, and the bones are hard.—*Same Donor.*

No. 397. Skull of a Tambuki Kaffir.—This skull resembles the European in every particular, with the exception that the nasal bones, although arched, are not so prominent; the upper jaw does not project, and the alveolar processes of both jaws are straight; the cranium is oval and capacious; the forehead is high, and well arched, and the superciliary ridge is marked; the ridge for the insertion of the temporal muscle is marked, but not strongly; the teeth are regular and sound; lachrymal canal is large; the coronal and sagittal sutures are obliterated. *Same Donor.*

AMUKOSAH TRIBE.

No. 398[a]. Skull of Magambo, son of the celebrated chief, Islambre, killed in the battle at Graham's Town.—This skull resembles in every particular the best-formed European skulls. The skull is remarkably well formed, with the exception of a projection of the occiput; the forehead is high, broad, and well arched, and likewise the vertex; the bones of the face are small; the nasal bones highly arched, and the alveolar processes perpendicular.—*Donor, Dr. Davy, A. I. H.*

TRIBE NOT KNOWN.

No. 399. Skull of a Kaffir chief shot on the banks of the Great Fish River.—Cranium large and well formed; forehead broad and well arched; the occiput is rather prominent; the ridge for the insertion of the temporal muscle is extensive, but not strongly marked; the superciliary ridge is marked; the nasal bones are small, and somewhat arched; the alveolar processes of the upper jaw are long, and project considerably.—*Donor, Mr. Averton, Assistant Surgeon, 3rd Regiment, Foot.*

No. 400. Skull of a Kaffir chief.—This skull resembles the best-formed Greek skull. The forehead is broad, high, and beautifully arched; the nasal bones are prominent, and highly arched; the alveolar processes are perpendicular.—*Donor, Dr. Davy, A. I. H.*

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[a] There is some doubt as to Nos. 398 and 400 being really Kaffir skulls.

No. 401. Skull of a Kaffir, a notorious thief.—Cranium large; forehead retreating, and very small compared to the posterior part of the skull; the parietal protuberances are very prominent, and the parietal diameter is large; the vertex is broad and flat; ridge for the insertion of the temporal muscle is strongly marked, but not extensive; the superciliary ridge is prominent, and there is a depression at the junction of the frontal and nasal bones, which are small and somewhat arched; the breadth between the eyes is rather great; the alveolar processes are long and projecting; the lower jaw is large, strong, and deep in front.—*Donor, Dr. Courtney, Assistant Surgeon, 75th Regiment.*

No. 403. Skull of a Kaffir.—This is a large, broad skull; the forehead is broad, but low and retreating; the ridge for the insertion of the temporal muscle extensive, and high on the head; the face is broad; the malar bones stand outwards, and the zygomatic arch has a sweep in the same direction; the breadth between the eyes is considerable; the nasal bones are small, and somewhat arched; the alveolar processes are short and perpendicular; the frontal and sagittal sutures are obliterated; the skull is heavy, and the bones thick and hard.—*Donor, Dr. Malcolm, Assistant Surgeon, 72nd Regiment.*

No. 404. Skull of a Kaffir.—This skull resembles the best-formed European in every particular. The forehead is broad, high, and well arched; the superciliary ridge is marked; the nasal bones are small and arched; the alveolar processes are somewhat prominent, but not more than in many European skulls.

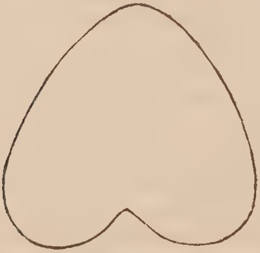
No. 405. Skull of a Kaffir.—Cranium large, and its longitudinal diameter very great; forehead broad, arched, but low; vertex broad; ridge for the insertion of the temporal muscle extensive; superciliary ridge marked; nasal bones slightly arched; alveolar processes project considerably: the lachrymal canal is of large size; the mastoid processes are very strong.

No. 406. Skull of a Kaffir.—Cranium oval, capacious, and well formed; forehead broad, high, and well arched; vertex broad; occiput well rounded; ridge for the attachment of the temporal muscle rather extensive and well marked; superciliary ridge slightly marked; face broad and flat; great breadth between the eyes, caused by the size of the nasal processes of the superior maxillary bones; the nasal bones are nearly on the same plane; the alveolar processes are broad in front, straight, and do not project; the anterior nasal aperture is large; the teeth are regular; the incisor teeth are broken, but what remains of them shows that they have been thick and sound; the foramen magnum and ovale are of large size; some of the sutures are obliterated.—*Donor, Dr. Hall, D. I. G.*

No. 407. Skull of a Kaffir.—Cranium oval and well formed; forehead rather narrow, but straight and well arched; occiput prominent; ridge for the attachment of the temporal muscle not extensive, nor strongly marked; superciliary ridge not marked; face rather broad, but not flat; breadth between the eyes of moderate extent, and the nasal bones are arched, although not highly; the malar bone stands outwards, and the zygomatic arch is large, and has a sweep in the same direction; the anterior nasal aperture is large, and of the form given above; the alveolar processes are short, broad in front, and stand slightly forward; the sockets for the teeth are strongly marked on the external face of the alveolar processes; the teeth are sound and regular, and their surfaces very much worn down; the incisors are short, thick, round, and truncated; the foramen ovale is rather large; there is a small aperture in the frontal bone, and another in the occipital, which seem to have been caused by a gun-shot; the orbital plate of the frontal bone, and the left parietal bone, are fractured.

DIVISION 19.—HOTTENTOT.

Of these there are seven in the collection. Hottentot skulls are of smaller size than the Kaffirs, and larger than the Bushman skulls. The Hottentot skulls resemble the Bushman, the Bushman displaying the same characters in a more marked degree. The Hottentot and Bushman have no point of resemblance to the Kaffir skulls. The skulls of the Hottentots are of small size, and of oval form; the forehead is high, well arched, and nearly perpendicular with the bones of the face; the vertex is of moderate breadth, well rounded, as likewise the occiput; the ridge for the attachment of the temporal muscle not extensive, nor high on the head; the superciliary ridge is marked, but not prominent: the face is broad, and sometimes flat; the malar bones are prominent, and project forwards and outwards; the zygomatic arch is not generally large; the nasal bones are of moderate size, but flat and on the same plane; this, with the nasal process of the superior maxillary bone being rather large, causes a great breadth between the eyes; the anterior nasal aperture is of this form, large and wide in No. 409, and small and wide in No. 414, and resembles very much the form of the Negro; the alveolar processes describe a large segment of a circle, they are short and broad in front, and do not in general project; in Nos. 411 and 413 the alveolar processes are very long, broad in front, and projecting; No. 408 has the nasal bones arched, and the breadth between the eyes is not great; the alveolar processes project; the ridge for the attachment of the temporal muscle is extensive, and strongly marked; the lower jaw is very thick and strong. Nos. 409 up to 414 show the Hottentot characters, more or less, in the broad, flat face, the great breadth between the eyes, the nasal bones being on the same plane, the large, wide, anterior nasal aperture, and the prominent cheek-bones. No. 412 has a peculiar appearance, from the low forehead, prominent superciliary ridge, broad, flat face, and fulness under the orbits. The base of the skulls presents nothing remarkable, The space for the downward development of the brain is of moderate extent, and the foramina for the transmission of nerves are of the usual size.



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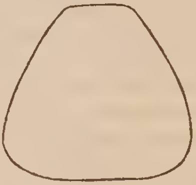

No. 414.

Out of seven skulls, Wormian bones were found in four instances in the occipital suture.

The lachrymal canal is of moderate size, and is formed entirely on the nasal process of the superior maxillary bone in one instance. The sphenoid is entirely cut off from the parietal by a process of the temporal bone, in two instances; the occipital foramen was thought to be small in one instance.

No. 408. Skull of a Hottentot who was executed for insurrection.—The skull is of small size; the forehead is arched, but small compared to the posterior part of the head; the parietal protuberances are very prominent, and the breadth between them is great in proportion to the skull; the occiput is likewise prominent; the ridge for the insertion of the temporal muscle is very extensive and high on the head; the superciliary ridge is marked; the face is broad, but not flat; the malar bone is prominent and stands outwards; the nasal bones are arched, and the alveolar processes project; the lower jaw is very thick, strong, and deep.—*Donor, Dr. Ford, A. S., 72nd Regiment.*

No. 409. Skull of a Hottentot of the Cape Mounted Rifles.—Cranium small, oval, and very well formed; forehead high and well arched; very great breadth between the eyes, being about an inch and a half; the nasal bones are on the same plane; the anterior nasal aperture is large, and of the form given above, which resembles that of the Negro; the face is broad; the malar bone stands outwards, and the zygomatic arch has a sweep in the same direction; the alveolar arch is large, and broad in front, and projects somewhat; the sutures are obliterated.—*Donor, Mr. Overton, A. S., 3rd Regiment.*

No. 410. Skull of a Hottentot, a murderer.—Cranium small, oval, and not symmetrical in the occipital region; anterior part of the skull is small compared to the posterior; the forehead is arched, and perpendicular with the bones of the face, which is broad and flat; great breadth between the eyes; nasal bones small, and on the same plane; nasal process of the superior maxillary bones is large; malar bones prominent, and project forwards and outwards; the anterior nasal aperture is wide, and of the form given above, which approaches to that of the Negro; the alveolar arch is broad in front, but does not project; the position for the sockets of the teeth must have caused them to stand forward; lachrymal canal large; the sphenoid is entirely cut off from the parietal by a process of the temporal bone; orbits contracted, and their greatest diameter is transverse.

No. 411. Skull of a Hottentot.—Cranium small, oval, but rather narrow; forehead well arched; superciliary ridge not marked; face neither broad nor flat; considerable breadth between the eyes; nasal bones nearly on the same plane; malar bones do not stand forward nor outward; alveolar processes very long and projecting.

No. 412. Skull of a Hottentot.—Cranium small and oval; forehead low and receding; superciliary ridge strongly marked with a depression at the junction of the frontal and nasal bones; sphenoid entirely cut off from the parietal by a process of the temporal bone; breadth between the eyes is great, which is caused by the nasal process of the superior maxillary bone; the nasal bones are small, and nearly on the same plane; face broad and full, and the cheek bones are flat, and stand out-

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wards; the superior maxillary bone and the alveolar processes are perpendicular and straight; the alveolar processes are broad in front; the orbits seem contracted an account of the prominent superciliary ridge, and the fulness of the inferior border of the orbit; the lacrymal canal is of large size; the external plate of the pterygoid process is broad.—*Donor, Mr. Morgan, A. S., 55th Regiment.*

No. 413. Skull of a Hottentot.—Cranium small, oval, and well formed; forehead high and well arched; superciliary ridge not marked; very great breadth between the eyes, caused by the size of the nasal processes of the superior maxillary bones; nasal bones small, and on the same plane; malar bones small, and do not stand forward; the alveolar processes are long, broad in front, but do not project; the frontal bone is perpendicular with the bones of the face; the lachrymal canal is of large size, and formed entirely on the nasal process of the superior maxillary bone.—*Donor, Dr. Malcolm, A. S. 72nd Regiment.*

No. 414. Skull of a Hottentot female, being part of a complete skeleton.—Cranium of small size; forehead high and arched, but narrow and small compared to the posterior part of the skull; the parietal protuberances are prominent, and the vertex is broad; the superciliary ridge is slightly marked; the bones of the face are small and flat; the breadth between the eyes is great, and the nasal bones are on the same plane; the orbits are small, contracted, and their greatest diameter is transverse; the anterior nasal aperture has the form given in the drawing, which approaches to that of the Negro; the cheek bones stand somewhat forwards and outwards; the alveolar processes are short, but the position of the sockets causes the teeth to project; the lower jaw is small and narrow in front. —*Donor, Dr. Dyce, A. S., Staff.*

DRIED HEADS OF HOTTENTOTS.

Of these there are three in the collection. The head is broad and square; face broad and flat, and the lower part narrow; the forehead is straight, high, and well arched; the ears are placed far back on the head, the distance from them to the prominent cheek bones being very great; the hair is very short and woolly, and grows in small tufts, curled and twisted into small round lumps, leaving the scalp visible between; the space between the two cheek bones is flat; the cheek bones are high and prominent, and stand forwards and outwards; these, with the narrow, pointed chin, form nearly a triangle; the breadth between the eyes is very great, and there is scarcely any perceptible bridge of the nose; nostrils small and depressed, and their greatest diameter is in the transverse direction; chin long and narrow; eyes oblique, the external angle being drawn downwards, and the internal rather upwards; lines drawn through the corners intersect, in No. 417, towards the forehead, and not as low down as the middle of the nose as have been stated; lines drawn through the corners of the eyes in Nos. 415 and 416 do coincide; the lips are thin, and the hair on the eyebrows and chin is scanty; the incisor teeth, in No. 415, are small, round, thick, and truncated, and not sharp at the point. No. 417 shows the Hottentot characters in the most marked degree. Facial angle: No. 415, 71°; No. 416, 75°; No. 417, 74°.

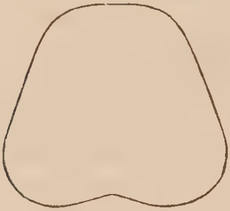
No. 415. Dried head of a Hottentot.—Head oval; the breadth between the eyes is considerable; the nose is slightly raised; the cheek bones prominent, and the lower part of the face narrow; the incisor teeth are small, round, thick, and truncated. Facial angle, 71°.

No. 416. Dried head of a Hottentot.—Head broad and square; great breadth between the eyes; nose flat, and on a level with the cheek bones; chin long, narrow, and projecting forwards. Facial angle, 75°.

No. 417. Dried head of a Hottentot.—Head broad and square, and shows the Hottentot peculiarities in a marked degree; great breadth between the eyes; the face broad and flat; nose flat; the cheek bones prominent, and on the same plane; the chin pointed, narrow, and projecting, and the eyes oblique. These are the most prominent characters. Facial angle, 74°.

DIVISION 20.—BUSHMAN.

There are nine skulls of Bushmans, and they are smaller than any other class of skulls in the collection. The skulls are small, and of a remarkably square form; the forehead is high, broad, and well arched, and perpendicular with the bones of the face; the forehead is, nevertheless, small compared to the posterior part of the skull, the parietal diameter being very great, and the vertex broad and flat; the occiput is well rounded, and frequently prominent; the ridge for the attachment of the temporal muscle is not extensive nor strongly marked; the superciliary ridge is frequently not marked, and in this respect resembles the Negro skulls, the frontal and nasal bones forming a smooth, continuous surface; the face is broad and flat; the frontal, nasal, malar bones, and alveolar processes are nearly on the same plane; the infra-orbital fossa is frequently deep, and thus takes away from the flat appearance of the face; the malar bones are prominent and stand forwards and outwards, and the zygomatic arch, although of moderate size, has a slight sweep in the same direction; the breadth between the eyes is very great, and the nasal bones are very flat, frequently oblong, and always on the same plane; the anterior nasal aperture is large and wide, and of a square, rounded form, resembling that of a Negro. It is of this form in Nos. 418 and 423. The alveolar processes are straight and broad in front, and do not project, but the position of the sockets causes the teeth to stand forward; the teeth are generally sound and regular; the incisor teeth are thick and round, and their surfaces worn down in No. 418; this is not the case, however, in any of the other skulls in which the teeth are present; the lower jaw is no way different from others; the transverse diameter of the base of the skull is sometimes great compared to the antero-posterior, when a line is drawn across from between the mastoid process and root of the zygoma, but in other skulls this is not observed; the space for the downward development of the brain is of moderate extent; the foramen for the transmission of nerves is generally of the usual size; in some, however, the foramen ovale is large; in others, of the usual size; out of nine skulls, Wormian bones are found in five instances in the occipital suture, and in one in the temporal and sphenoid sutures; the lachrymal canal is sometimes of large size.



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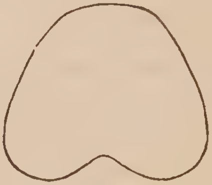


No. 423.

From the foregoing description of the Hottentot and Bushman skulls it will be observed that there is a great resemblance between them, and that the Bushman presents the same characters in a more exaggerated form. They are both, however, entirely different from any other class of skulls in the collection, looking at them collectively, although many of the characters, when taken separately, resemble the skulls of other races, such as the Ashanti Negro, and likewise the Malay; they do not in any particular resemble the Chinese. The similarity between the Hottentot, the Bushman, and the Ashanti skulls, consists in both being of small size; the forehead smooth, high, well arched, and nearly perpendicular with the bones of the face, the great breadth between the eyes, the nasal bones oblong and on the same plane, and the size and form of the nasal aperture. The alveolar processes are broad in front, but they project more in the Ashanti than in the Hottentot or Bushman, although in some of the Hottentots the alveolar processes project as much as in the generality of the Ashanti. In the Hottentot and Bushman the malar bones stand more prominently forwards and outwards, causing the face to have a broader and flatter appearance. The form of the cranial cavity is oval in the Hottentot and Ashanti; the Bushman's skull is of a square form. The points of resemblance between the Hottentot, the Bushman, and the Malay, are—the broad, flat face; the outward projection of the malar bones; the frontal, nasal, malar bones, and alveolar processes being all nearly on the same plane. In the Bushman and Malay the skull is of a square or round form, and the transverse diameter of the base of the skull in both is great compared to the antero-posterior. However, on comparison, the difference is very striking; the Malay skull is large and capacious, with the nasal bones always more or less arched; the breadth between the eyes is great in both, and the anterior nasal aperture is also large and wide. The Hottentot and Bushman skulls are the smallest in the collection, and the nasal bones are on the same plane, and flatter, with greater breadth between the eyes than in any other skulls. The anterior nasal aperture also approaches nearer to the Negro form.

Although, as has been stated, there are many points of resemblance between the Hottentot, the Bushman, and the Malay, yet, on comparing the three classes of skulls, the Hottentot and the Bushman bear the greatest resemblance to the Negro, especially to the Ashanti, the Hottentot approaching nearer to them than the Bushman.

No. 418. Skull of Arie, a Bushman chief.—Cranium small, oval, and well formed; forehead high, well arched, and perpendicular with the bones of the face; ridge for the insertion of the temporal muscle extensive and high on the head; superciliary ridge marked; face broad and flat; space between the eyes considerable, nasal bones small, and on the same plane; anterior nasal aperture of the same form as in the Negro; the alveolar processes project somewhat; the incisor teeth are small, round, and truncated; the lachrymal canal is large; the orbits are contracted towards their internal angle.—*Donor, Mr. Ford, A. S., 72nd Regiment.*

No. 419. Skull of a Bushman killed in a Commando in 1825.—Cranium broad and square; forehead perpendicular with the bones of the face; vertex broad and flat, occiput prominent; superciliary ridge not marked; face broad and flat; space between the eyes great, and the internal angle of the frontal bone descends for a considerable distance to meet the nasal bone; nasal processes of the superior maxillary bones are large; the nasal bones are small, triangular, and on the same plane with one another, and likewise with the cheek bones; the malar bones stand forwards and outwards; the anterior nasal aperture is of a square form; the alveolar processes are somewhat everted; the lachrymal canal is of large size.

No. 420. Skull of a Bushman, a notorious murderer.—Cranium small, and of a square form; forehead arched, and perpendicular with the bones of the face, but small compared to the posterior part of the skull; the vertex is broad and flat; the parietal protuberances and occiput are prominent; superciliary ridge not marked; face broad, flat, and square; considerable breadth between the eyes; nasal bones oblong, and on the same plane; malar bones project forwards and outwards; anterior nasal aperture of the same form as the Negro; alveolar processes straight, and do not project; incisor teeth sharp, and not round, and truncated; lachrymal canal of large size.—*Donor, Dr. Andrew Smith, A. S., Staff.*

No. 421. Skull of a Bushman.—Cranium small, and of a square form; forehead high, arched, and perpendicular with the bones of the face, but small compared to the posterior part of the skull; parietal protuberance prominent, and the head broad across the vertex; superciliary ridge not marked; face broad and flat, and the malar bones project forwards and outwards; breadth between the eyes great; nasal bones on the same plane, and on a level with the cheek bones; anterior nasal aperture of the same form as in the Negro skull; alveolar processes are long, and project somewhat.—*Donor, Dr. Gill, A. S., Staff.*

No. 422. Skull of a Bushman.—Cranium small, and of a square form, except posteriorly where the occiput is projecting; forehead high, arched, and perpendicular with the bones of the face; superciliary ridge not marked; bones of the face flat; malar bones do not project forwards; considerable breadth between the eyes; nasal bones oblong, and on the same plane; anterior nasal aperture of a square form; alveolar processes thick and full, but do not project; the permanent teeth have not descended; the lachrymal canal is of large size.—*Donor, Dr. Malcolm, A. S., 72nd Regiment.*

DIVISION 21.—MOZAMBIQUE.

There is only one skull from this part of the African coast in the collection. In some points it resembles the Negro, in others the European skulls. The narrow, low forehead, and the long, projecting alveolar processes of the upper jaw, are the only Negro peculiarities. The oval skull and face, with the prominent nasal bones, are those of the Europeans; likewise, the form of the anterior nasal aperture. The dried head, as will be observed from the description of it, presents the Negro characters in the short woolly hair and projecting alveolar processes of the upper jaw, but the peculiarities of the Negro are not strongly marked, and are somewhat softened and modified.

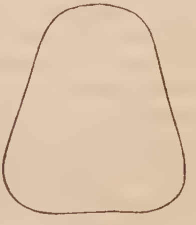
No. 428. Skull of a native of Mozambique, who was executed for insurrection.—Cranium oval; the forehead is small, narrow, and very low and retreating; the ridge for the attachment of the temporal muscle is extensive, and the superciliary ridge is slightly marked; nasal bones very highly arched; malar bones neither project forwards nor outwards; the alveolar processes are long and projecting; the anterior nasal spine is large; the sockets for the teeth are of very great depth, and the fangs of the teeth are of corresponding size; the skull altogether resembles the European, with the exception of the projecting alveolar processes.—*Donor, Mr. Ford, A. S., 72nd Regiment.*

No. 429. Dried head of a native of Mozambique.—Head oval; forehead high, straight, and well arched; hair short, thin, and woolly; beard also thin, but the hair is longer, and grows upon the front of the neck; face oval; nose somewhat prominent, but not so high as in Europeans; the alveolar processes of the upper jaw project; the teeth are of a dirty brown colour, very irregular, and their surfaces smooth and worn down; the lips are thin; the cheek bones are not prominent; facial angle, 76°.

DIVISION 22.—MADECASSE.

There are three skulls from Madagascar in the collection; they all display individual peculiarities in a greater or less degree.

No. 430 approximates more nearly to the European; the only Negro characters are, the nasal bones being on the same plane, the alveolar processes standing very slightly forward, and the form of the anterior nasal aperture thus. See illustration.


No. 430.

No. 431 resembles the Negro skull in every particular.

No. 432 is a large, unsymmetrical skull, and resembles the Malay much more than the Negro, viz., in the broad, flat face; the outward projection of the malar bones; the straight and broad alveolar processes; the slightly arched nasal bones, and great breadth between the eyes. The frontal, nasal, and malar bones, and alveolar processes of the superior maxillary bones, are all nearly on the same plane.

Wormian bones were found in the occipital suture in two out of three.

No. 430. Skull of a native of Madagascar.—Cranium oval and well formed; longitudinal diameter rather great, and the vertex low; forehead broad, high, and well arched; a depressed line across the skull, immediately behind the coronal suture; the superciliary ridge is prominent; the nasal bones are small, triangular, and on the same plane, but the breadth between the eyes is not great; the bones of the face are of a moderate size, and the malar bones do not project forwards nor outwards; the frontal bone is nearly perpendicular with the bones of the face; the anterior nasal aperture is of the form given above; the nasal spine is long; the opening into the orbits is deep at the internal angle; the alveolar processes stand somewhat forwards. This skull has as much resemblance to the European as to that of the Negro.—*Donor, Mr. Tighe, Surgeon, 75th Regiment.*

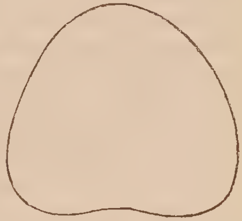
No. 431. Skull of a Yambany, or Madagascar boy.—Cranium small and narrow; forehead low, but arched; superciliary ridge not marked; ridges for the attachment of muscles not evident; nasal processes of the superior maxillary bones large; considerable breadth between the eyes; nasal bones oblong, and very slightly arched; alveolar processes long and projecting; anterior nasal aperture of the same form as in the Negro. This skull has all the Negro peculiarities.—*Donor, D. Clarke, Esq., Surgeon, Sierra Leone.*

No. 432. Skull of a Madecasse idiot.—Cranium of large size; occiput broad, flat, and perpendicular; the two sides are not symmetrical, the right side being more prominent than the left; the forehead and vertex are broad and arched; the superciliary ridge is not marked; the face is broad and flat, and the malar bones stand forwards and outwards; the nasal processes of the superior maxillary bones are large, and the breadth between the eyes is very great; the nasal bones are slightly arched; the alveolar processes do not project; the anterior nasal aperture is of the European form; the external pterygoid plate and styloid process are large; the symphysis of the lower jaw is rather prominent; the teeth are regular and sound.

This skull resembles the Malay.—*Donor, Mr. Allan, Staff Surgeon, 2nd Class.*

DIVISION 23.—MAURITIUS.

The two skulls from the Mauritius, although presenting the Negro characters, do not resemble the skulls from the west coast of Africa. No. 433 is of the peculiar form stated in the description of the skull. The forehead is remarkably high; the face broad and flat; and all the bones are nearly on the same plane, with the exception of the long projecting alveolar processes; the nasal bones are oblong, and on the same plane, and the anterior nasal aperture is of exactly the same form as that given below: the face, therefore, shows some of the Malay, and some of the Negro characters. The form of the cranial cavity is, probably, an accidental variety. The skull No. 434 is small; the forehead low and retreating; the bones of the face are broad, and much shorter than in the Negroes in general. It presents the Negro peculiarities, however, in the nasal bones being on the same plane; the projecting alveolar processes (although short): and the anterior nasal aperture, which are of this form; Wormian bones were found in one instance, in the occipital suture, and in both skulls in the temporal and sphenoid suture.

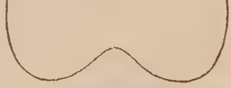

No. 434.

No. 433. Skull of a Negro, from the Mauritius.—This skull is of a very peculiar form. Forehead very high, straight, and well arched, as also the vertex; the occipital bone is very prominent; the face is broad and flat, and the malar bones stand forwards and outwards, and are on the same level with the nasal and frontal bones; the breadth between the eyes is great, and the nasal bones are oblong and on the same plane; the alveolar processes are very long, and project to a great extent; the anterior nasal aperture is of a circular form, or nearly the same as that of No. 434; the frontal bone is perpendicular with the bones of the face, and a line let fall from the centre of the forehead would only cut off part of the projecting alveolar processes.—*Donor, Dr. Kinnis, A. S., Staff.*

No. 434. Skull of a black Creole, of the Mauritius: he showed a great propensity to steal even useless things; he died of intussusceptio, in the Prison Infirmary, Mauritius, in 1839. —This skull is small; forehead low and retreating; ridge for the attachment of the temporal muscle rather extensive; superciliary ridge very slightly marked; face broad, and very short; great breadth between the eyes; nasal bones large, oblong, and on the same plane; alveolar processes short and projecting; anterior nasal aperture large, and of the Negro form; orbits small, and contracted towards their internal angle; the lower jaw is narrow in front, and the teeth are sound and regular.—*Donor, Mr. Allan, Staff Surgeon, 2nd Class.*

DIVISION 24.—AUSTRALIAN.

Of these there are ten in the collection. They are large, oval skulls, with an oval face, and, with the exception of the projecting alveolar processes, they have not one point of resemblance to the Negro. The cranium is large and capacious, and somewhat compressed laterally, but not in any great degree (except No. 443); they are rather narrow towards the summit, where there is generally a ridge along the sagittal suture, and a shelving on each side; the forehead is rather low, narrow, and receding; the ridge for the attachment of the temporal muscle is extensive and well marked; the superciliary ridge is in general well marked, and is remarkably prominent in Nos. 440 and 441. In seven out of the ten skulls there is a deep depression at the junction of the frontal and nasal bones; and in the same number there is a deep groove on the malar bone, immediately below the prominent and thick external angular process of the frontal bone, and the ridge which proceeds from this process upwards on the head is strongly marked; the nasal bones are arched, but not so highly as in Europeans; the anterior nasal aperture is of large size, and generally of this form (No. 438); the malar bones have the same direction as in European skulls; the superior maxillary bone does not project, but the alveolar processes are very long and projecting, and the sockets for the teeth are very deep; the teeth are regular and sound, and their surfaces worn down; the lower jaw presents nothing peculiar; the base of the skull does not deviate from the European; the space for the downward development of the brain is of moderate extent, and the foramina are of the usual size. Wormian bones were found in the occipital suture in seven instances out of the ten, and in one instance in the temporal



No. 438.

and sphenoid suture. The lachrymal groove was formed entirely on the nasal process of the superior maxillary bone in one; in two, the occipital foramen was small.

No. 438. Skull of a black native of Sydney, New South Wales.—Cranium narrow, and compressed laterally; forehead low and retreating; posterior part of the skull is irregular, with numerous small elevations and depressions on its surface; ridge for the attachment of the temporal muscle not extensive nor strongly marked; superciliary ridge not marked; breadth between the eyes is not great, and the nasal bones are arched, but not highly; the malar bones do not stand forwards nor outwards; the alveolar processes are long, and project to a great extent; the anterior nasal aperture is large, and of an oval form; the lachrymal canal is large; the molar teeth are strong, and their surfaces broad and smooth.—*Donor, Dr. Gibson, A. S., Staff.*

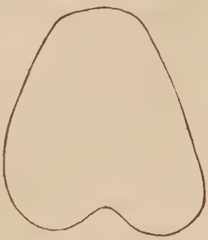
No. 439. Skull of "Raubon Ton," a native of one of the most savage tribes in New South Wales: he was shot in the neighbourhood of Moreton Bay, in 1829, in the act of inveigling a constable to an ambuscade where an unfortunate man had been murdered only a few days before.—Cranium long, and compressed laterally; forehead narrow, low, and retreating towards the vertex, where there is an elevated ridge; ridge for the attachment of the temporal muscle not extensive or strongly marked; superciliary ridge prominent, and a depression across the root of the nasal bones; breadth between the eyes rather great; nasal bones arched, but not highly; malar bones do not project forwards nor outwards; the anterior nasal aperture is large, and has somewhat of the European form; the alveolar processes are long, and project very much; the teeth are sound, regular, and their sockets very deep; the ramus of the lower jaw is broad; the skull is heavy, and the bones thick.—*Donor, Dr. Lister, A. S., 57th Regiment.*

No. 440. The skull of a black male native of New South Wales.—Cranium large, and not compressed laterally; forehead very low and retreating; superciliary ridge remarkably prominent; ridge for the attachment of the temporal muscle not extensive nor strongly marked; nasal bones oblong, and nearly on the same plane; malar bones small, and do not project forwards nor outwards; a deep, depressed groove on the malar bone, immediately below the prominent external angular process of the frontal bone; the lachrymal groove is formed entirely on the nasal process of the superior maxillary bone; the anterior nasal aperture is of the form given above; the alveolar processes project; the teeth are strong, and their surfaces smooth and very much worn down; the incisors are thick and round, and their surfaces flat, not sharp as in Europeans.—*Donor, Dr. Gibson, A. S., Staff.*

No. 441. Skull of a black native of Sydney, New South Wales.—Cranium oval; forehead broad, but very low and retreating; ridge for the insertion of the temporal muscle not well marked; superciliary ridge remarkably prominent, and a deep depression across the root of the nasal bones; breadth between the eyes is not great; the nasal bones are small, and very little arched; the malar bones do not project forwards nor outwards, and there is a deep depression on the malar bone immediately below the prominent external angle of the frontal bone; the anterior nasal aperture is of a rounded form; the alveolar processes project; the teeth are sound and regular, their surfaces are smooth and worn down.—*Same Donor.*

DIVISION 25.—VAN DIEMEN'S LAND.

There are two skulls in the collection: they are very small and of an oval form; the forehead is small and low; the vertex is broad and flat; and the parietal protuberances prominent; the occiput is also prominent in No. 446; the ridges for the attachment of the muscles are not extensive nor strongly marked; the face is short and the bones small; the malar bones have the same direction as in European skulls; the breadth between the eyes in No. 446 is rather great, and there is a groove across the root of the nasal bones, which are somewhat arched at their lower part; the frontal bone is perpendicular with the bones of the face; the superior maxillary bones do not project; the alveolar processes are short, and project somewhat; the anterior nasal aperture is of this form in No. 446; the base of the skull presents no peculiarity; Wormian bones were found in the occipital sutures in both skulls, and in one in the temporal and sphenoid suture.



No. 446.

The skulls from Mozambique, Madagascar, Mauritius, New South Wales, and Van Diemen's Land, as will be observed from the foregoing details, present the Negro characters in a greater or less degree. Those from New South Wales and Van Diemen's Land have peculiarities different from the Negro: in them the superciliary ridge is more prominent, with a deep depression across the root of the nasal bones; there is a deep depression also on the malar bone, immediately below the external angular process of the frontal bone; this is also found in the skulls of the New Zealanders, and in two of the North American Indians, and most strongly marked in those from the Sandwich Islands; in the Australian and those from Van Diemen's Land, the nasal bones are better arched than in the Negro; the alveolar processes project in the Australian, and in the skulls from Van Diemen's Land, and the anterior nasal aperture is large, and nearly of the same form in the Australian and Negro.

No. 445. Skull of a native of Van Diemen's Land.—Cranium small and oval; forehead broad, but low and retreating; parietal protuberance prominent, and the vertex broad; ridge for the insertion of the temporal muscle not extensive; superciliary ridge marked; breadth between the eyes not great; nasal bones are slightly arched; bones of the face small, and the malar bones do not stand forwards nor outwards; the alveolar processes are short and project; the anterior nasal aperture is large, and of the same form as No. 446; the orbits are small and contracted; the teeth are sound, and their surfaces are not worn down; the bones of the skull are thick, and it is heavy in proportion to its size.—*Donor, Dr. Willis.*

No. 446. Skull of a boy, a native of Van Diemen's Land. —Cranium of an oval form; forehead straight, narrow, and arched, but small compared to the posterior part of the skull; the parietal protuberances are very prominent, and the vertex is very broad; the occiput is also prominent; the base of the skull is not symmetrical: the right mastoid process and part of the occipital bone are more prominent than the left; the ridges for the attachment of muscles are not marked; the breadth between the eyes is considerable; the nasal bones are oblong and slightly arched at their lower part, with a depressed groove across their root; the malar bones do not project forwards nor outwards; the anterior nasal aperture is of the Negro form; the alveolar processes are short, and project very much; the teeth are strong and sound.

(*To be concluded in our next Number.*)

ART. XI.—*Selections from the Unpublished Manuscripts of the late* ABRAHAM COLLES, *Professor of Surgery to the Royal College of Surgeons of Ireland.* Edited by his Son, WILLIAM COLLES, F.R.C.S.I., Surgeon to Steevens' Hospital, &c.

(*Continued from* vol. xxii. p. 43.)

No. 8.—ON DISEASES OF THE GENITAL ORGANS AND RECTUM: AND ON BRACHIAL ANEURISM.

IN the present communication I have selected some cases presenting peculiarities in appearances or symptoms, and sometimes leading to improper surgical interference. These I think useful to record, as they show that the surgeon cannot be too cautious before coming to a conclusion as to the nature of a disease, or the remedies to be adopted, and that he should be aware not only of the ordinary course of nature in the various affections, but should also recollect that she sometimes deviates from the regular course, and presents anomalous appearances which may puzzle the most experienced. I also add some selections and observations on cases of disease of the rectum; the first two of which present some useful suggestions.

Paraphymosis relieved.—CASE I.—January 24, 1814. A young lad, aged 15, had drawn back the prepuce on Thursday, and it remained so till Monday evening. I made two or three ineffectual attempts at reduction by force; then tried by squeezing the base of the glans to reduce its size; but I here also failed. I now thought I should have to divide it, and proceeded to the operation. On passing the director under the stricture, it struck me I might raise the skin, and depress the base of the glans. Passing the point of the instrument under the prepuce at the right side, I raised it up, so as to be able to catch the skin between the finger and thumb; then, passing the director to the left side, I found that in its progress it raised up the skin, and brought it forward over the glans, and the reduction was effected without force.

CASE II.—January 10, 1815. A man with paraphymosis applied; it had occurred three or four days ago, and prevented his having any sleep for the last three nights. Immediately after connexion he endeavoured to draw forward the prepuce, but could not succeed. The stricture is at some distance behind the corona glandis, and is very tight; the line of stricture is ulcerated, and of a blackish colour; the skin, both before and behind the stricture, is much swollen. This appeared a very bad case, but was reduced with great facility.

I made the patient lie on the floor, on his back, and, kneeling at his right side, I passed the silver director under the stricture towards the right side, and, while the point lay under the stricture, I pressed down the swollen part of the prepuce and corona glandis with the stalk of the instrument; then, pressing this portion backward, I found it was easily pushed back beyond the stricture. In this manner, passing the director from the right to the left side, I quickly succeeded in removing the paraphymosis.

I think an instrument might with advantage be employed in such cases, somewhat of the shape of a shoehorn, only not much hollowed on the surface which is to be applied to the glans penis.

I next record a case of rupture of the urethra, and another supposed rupture of the corpora cavernosa penis, in consequence of awkward, ill-directed efforts at connexion.

Case III.—*Ruptured Urethra in Coitu, fatal.*—June 10, 1812. Called to Mr. K——, aged about 38; flabby constitution, full habit, and prone to obesity. Married two months. Last night, on having connexion, he hurt himself; it would seem that the penis had pushed against the bones of the pubes. At the instant he felt severe pain, and as if something had been broken; next day the integuments of the penis and scrotum were full, livid, and a small swelling was visible on the left side of the penis, anterior to the scrotum. This was hard and circumscribed. Passed urine, not more than an ounce, mixed with blood, and attended with scalding pain at the tumour; urine drawn off by catheter.

11th. The great pain attending micturition prevented his passing more than a few drops of urine; again drawn off; tumour same size.

12th. Tumour much increased in size; some fetid pus, on pressure, passed from the urethra; gum-elastic catheter passed, and retained; he was feverish; in the evening he had a severe rigor.

13th. Fever, and discharge, mixed with air, increased.

15th. Made an incision into the tumour, and let out a mixture of pus, urine, and blood mixed with air; catheter again passed and retained; rigors occur daily, increasing; pain in head; abdomen tympanitic; desponding; countenance yellow.

20th. Died unexpectedly. The urine passed by urethra and also by the opening in the abscess for the last two or three days on withdrawing the catheter.

Case IV.—*Tumour in the Penis.*—December 12, 1808.

Mr. G——, aged 38 last March, while in the act of copulation pushed against the bone of the pubes, and felt he had hurt himself; he observed a lump come on the dorsum penis, and the organ curved upwards in erection.

On examination, a flat, square lump, about the middle of the dorsum penis, was found lying under the vena superficialis penis, firm in structure; it appeared to be movable. This was, however, doubtful. This lump has increased, and, in proportion to its growth, renders the curvature in erection greater, when he feels as if the penis were bound by a cord; does not know if the tumour increases on erection.

Ordered blistering, and to take pills of hemlock and calomel.

I find also three or four cases recorded of tumours in the corpora cavernosa penis, but no cause assigned for their appearance, and no treatment successful in removing them.

The Case No. v. is worthy of being recorded. The two following cases represent the testes not in the natural position.

Case V.—*Œdema* (*Elephantiasis*).—April, 1833.—Mr. G——, aged 48, for four years past has had a swelling of the prepuce and skin of the penis; it was not discoloured till lately. The prepuce is distended, so as to form a curve anterior to the glans; the size of the penis is considerably increased, the swelling rather hard, but allows of pitting; the scrotum is also thickened anteriorly, not posteriorly; the skin of the penis is of a purple colour, and shines; no pain or inconvenience, except that he cannot have connexion; the general health is very good; never was in a warm climate; is a married man, with children. I only recollect one other case at all like this, in an hospital patient.

Case VI.—*Testis misplaced.*—Yesterday I saw Mr. K——, aged 36, who had the left testis in the perineum, with one edge above, the other below; the right testis is lodged in the scrotum, and is in every respect natural; the left is at present inflamed, either from a hurt received on getting down off a public coach, or from an injury by a girl of the town; the integuments covering it are not loose, and he seems to suffer severe pain from it, particularly on the anterior spine of the ilium.

Case VII.—Mr. S——. That portion of the integuments corresponding to the scrotum in its colour and corrugation is very small, not larger than a child's, and this does not receive the testes; these are lodged in a soft, smooth, white skin at the side of the scrotum, and are of a full size; the scrotum appears as a small cone on the top of the smooth skin. He has not any children.

Those who have one testis in the abdomen generate, of which I recollect many instances; but I do not recollect an instance of those who had both testes in the abdomen generating.

I find two or three cases where a tumour on the cord was mistaken for hernia, and a truss worn for some time, but they present nothing extraordinary. The next is a case of hydrocele cured by injection of its own fluid.

CASE VIII.—*Hydrocele, injected with its own fluid; cured.*—September 13, 1834. This day I injected a hydrocele with its own fluid, having allowed it to remain a short time in the basin.

August 4th. The case went on in every respect as those injected with wine and water; the inflammation fully sufficient, yet moderate.

I next give a curious case of supposed hermaphroditism.

CASE IX.—*Tumours mistaken for Inguinal Hernia.*—January 31, 1828. Miss W——, aged 26, applied three months ago concerning a tumour in the left groin, which her mother told me was a rupture, and I believed it to be one, and advised a truss; found great difficulty in getting a truss to fit. Last month she applied concerning a similar though smaller tumour on the right side, which I examined two or three different times without being satisfied as to its nature.

This day I find the tumour on left labium, to which the truss was applied, to be about the breadth of three fingers in its long diameter, that of the right side the breadth of two fingers in its length; they are both very movable, and can be pushed down more than one half the length of the labium without any pain; but on attempting to force either into the ring she suffered much pain. The tumours are smooth, elastic, as if fluid were contained in a firm sac; in walking she feels no uneasiness at first, afterwards they become uneasy; in coughing no protrusion is felt against the fingers applied to the inguinal rings; general health good.

I suspect the tumours to be testes.

June, 1832. Tumours smaller than male testes; the vessels of the cord can be distinctly felt; squeezing them causes uneasiness; the vagina can scarcely admit the finger, not more than an inch in length. She admits that she never menstruated. In place of the male penis was a body resembling the glans penis, except, on turning it up, it is found divided in its entire length: the urethra is seen at a considerable distance from this.

Case X.—*Inguinal Hernia.*—January 29th. Assisted in operating on a young man, aged 20, for inguinal hernia of the right side. There was a great doubt as to the nature of the disease, for the tumour most strikingly resembled hydrocele of the tunica vaginalis, and the test of the candle showed it to be quite transparent. Still, I was satisfied that the intestine was down, and not to be returned by taxis. The sac was very thick; it proved to be congenital hernia. On passing the finger into the neck of the sac it was found to pass up very high before reaching the abdomen; high up in this was the stricture; being divided, the bowels were easily returned.

I would now direct attention to a few cases where there were doubts as to the nature of the disease, as to whether it was a hernia or hydrocele, and even an operation undertaken for the relief of the symptoms.

Case XI.—*Hydrocele resembling Hernia.*—April 28, 1827. A middle-aged man presented himself with a hydrocele, large and oblong, being at one point more prominent to the eye and thin to the touch; it rose up so high along the cord as to resemble hernia. On pressing it while he stood, a part seemed to return with the sensation of an intestine. When laid horizontally, I pushed up the whole, and found the ring so wide as to admit two fingers. I now made him stand up while the fingers were in the ring; the tumour gradually returned below, yet the fingers did not feel anything passing down. On his coughing, the tumour descended with the same sort of burst as that of an inguinal hernia. I drew off $3\frac{3}{4}$ imperial pints of straw-coloured fluid.

Case XII.—*Hydrocele mistaken for Hernia.*—Monday, January 12, 1824. Called by Mr. R—— to a child 18 months old. He told me he had been often called to replace a congenital inguinal hernia; generally he succeeded, but as the testes had not descended, a truss could not be applied; now he could not succeed; the intestine was down since Saturday. I could get only a confused account from the nurse; neither the state of the abdomen, the countenance, nor the stomach, seemed to require immediate operation; besides, I had my doubts of hernia, for, on examining the tumour, I felt at the lower part a body which I suspected to be the testis, nearly double the size of the opposite. On passing the finger and thumb to the ring, I did feel the tumour as passing up through the opening into the abdomen. However, Mr. R——'s assertions prevailed. Calomel, half a grain every hour, and enemas.

At 11 o'clock at night I was called on to see the child, who was much worse; vomited everything, and had no stool, except some hardened fæces from enemas; the belly was not painful to the touch, nor swollen; face pale, and eyes sunken. Under these circumstances I agreed to the operation.

Mr. R—— cut cautiously, and spent time in separating the coverings of the sac; laid bare the parts near the ring, and now was certain no intestine was in the opening; he opened the lower part and let out water; slit up the sac on a director, and saw the testis lying about the middle of the sac; the director was then passed up the canal into the abdomen; no intestine was there. The wound was united by stitches and plaster.

Wednesday. Going on well. Had griping.

Had I been called alone to this case, I could not have suspected strangulated hernia from the feel of the parts. The test of a candle was not admissible, from fat and flatness; fluctuation could not be felt from tenseness of the tumour.

January 30th. Completely recovered from the operation.

CASE XIII.—*Operation for Hernia in case of Inflamed Testis.*—November 27, 1806. Saw a patient of Mr. ——, a man aged about 40; his countenance sunken; a dark circle round the eyelids; great tossing; pulse weak and small; skin cold; frequent vomiting, hiccup, pain in the right side of the abdomen, which was not tense, but was sore to the touch. There was a tumour in the right groin less than an egg; near the pubes the integuments were red; it resembled a venereal bubo; the right testis was small, and could not readily be discovered. He said he sometimes pushed up the testis into the abdomen with the intestines; there was great difficulty to ascertain if it were femoral or inguinal hernia, as we could not satisfactorily feel the ring; on trying the taxis a gurgling noise of a portion of gut was heard, but we could not get up the hernia. Tobacco enema caused a desire to stool, but the enema did not pass; the vomiting was without any straining; it was merely a slight effort to spirt out from the mouth; he ejected about half a pint at each effort.

Mr. —— operated; cut down on the sac; on pinching it up, he felt another body within; cut a small hole and divided the sac; intestine appeared healthy; felt at the ring like a thick cord; divided the pillar of the ring, and found a second structure, which he divided; the intestine kept by adhesion; this was divided; and it then returned. He died the next day, suffering great pain in the abdomen.

On post-mortem examination the wound was emphysema-tous; the intestines were filled with liquid fæces, inflated, inflamed, and adhering to each other and to the peritoneum; found a body blocking up the abdominal ring and adhering to it. Our surprise was great to find it to be the right testicle.

Lastly, I record two cases of hernia occurring in unusual positions.

Case XIV.—*Hernia on Back.*—May 9, 1829. I saw a daughter of Mr. L——, three years old; of delicate form, but in good health. Her father states that this tumour was observed at the time of her birth. It was then smaller than at present. Now the tumour is as large as a moderate-sized watch, more conical; on the back, immediately above the left spine of the ilium, it admits of being easily returned, but quickly appears again. She has been away from her parents for the last three months, during which time they think her figure is slightly deformed, for there is a fulness along the right side of the spine, and on the left side, on a line with and close to the tumour, there seems to be a concavity. She has perfect use of her limbs.

Case XV.—*Unusual Ventral Hernia.*—May, 1829. Mr. W—— has intestinal hernia, as large as a watch on the right side, half a finger's breadth from the spine of the ilium, and a finger's height above Poupart's ligament; this he retains in the abdomen by means of a leather bandage with a pad attached.

The subject of diseases of the rectum occupied much attention, and he gave his opinions on the subject in a paper in the Dublin Hospital Reports. I also published another paper of his, with cases of disease of the rectum. The remaining cases recorded I have endeavoured to collect and arrange in a condensed form.

I find, from the year 1823 to 1841, 69 cases noted—the youngest four years old, the eldest seventy; of these, 32 were females, and 28 males; 15 had vascular tumours; 38 were affected with ulcers or fissures; 10 had both vascular tumours and fissures. In cases of tumours he applied caustic to one, and cut the remainder, pulling down the tumour and removing it with a scissors close to the forceps. Of these, 2 had hemorrhage; in 1 the bleeding occurred, as reported, from cutting too high. We should never cut above the sphincter. The bleeding was arrested by a sponge. In the second case of hemorrhage, the report is:—"I found no difficulty in drawing down the integuments, and securing the bleeding vessel."

These are the only unfavourable cases recorded, though he must have operated on a great number of cases, of which no mention is made, as they were unattended with any remarkable occurrence or symptom.

In 38 of these cases the disease was fissure or ulcer: of these, he operated by incision in 21, and he applied caustic, nitrate of silver, caustic potash, or sulphate of copper, to 16. Some of these required a second or third application of caustic, but these seemed to have all terminated favourably.

Of cases where there was the combination of vascular tumour and fissure, there are 12 recorded: of these he treated 8 by incision of the ulcer, and 4 by caustic; of these, 1 was attacked by erysipelas, and recovered, 1 died, and an abscess was found beneath the rectum.

I find, in fine, some cases of wounds of the brachial artery, and aneurisms consequent on bleeding, to the number of twelve.

They occurred at different ages. They came under notice from three days to six weeks from the time of the bleeding; in the majority the wound was open, and the patient reduced by repeated bleedings. In only two were the wounds closed; many of them appear to have had a sac with an opening in the artery, as well as externally.

In one remarkable case the patient was bled for an injury of his head; he seemed to progress favourably for some days, when an abscess formed under the cut, and opened, and then commenced to pour out blood.

One was a case of aneurismal varix, in which the patient compared the noise in the tumour to the hissing of a butterfly. Ten were operated on, and after more or less trouble a ligature passed above and below the wound.

In one a ligature high up did not control the bleeding, but, placed on the same vessel lower down, effectually stopped the flow from the upper portion.

In two there were more than two ligatures; in one, four different ligatures were applied, after various dissections, before the bleeding was stopped, each vessel being supposed to be the one injured.

In one case a ligature was applied above the wound. Secondary hemorrhage occurred in two days, and required a second operation to secure the lower end of the vessel.

In the aneurismal varix there was secondary hemorrhage on the eighth day, but it stopped without any further interference.

There was one case which had a fatal result; the patient died from the repeated bleedings, being exhausted by secondary hemorrhage.

The ligature came away in all of those recorded, from the 12th to the 23rd day.

Two cases of aneurism were cured by pressure made on the tumour by means of a fine sponge. The first occurred in 1813.

Art. XII.—*Practical Observations on Blistering the Cervix Uteri, as a remedial agent in the Treatment of certain diseased conditions of that Viscus.*

By Robert Johns, A.B., M.B., T.C.D., L. & F.R.C.S.I.; Member of Council of the Surgical Society of Ireland; late Consulting Accoucheur to St. Peter's Parochial Dispensary; Ex-Assistant Master to the Lying-in-Hospital, Dublin; Vice-President of the Obstetrical Society of Ireland; Member of the Zoological Society of Ireland; Chairman of the Midwifery Court of Examiners of the Royal College of Surgeons in Ireland; Consulting Accoucheur to the Anglesey Lying-in Hospital, &c., &c.

It is a fact well known to the experienced uterine pathologist, that it is not unusual, even after diseases of the womb have been removed, for some one symptom, most frequently that which throughout the duration of the affection had been most distressing, to remain, resisting all means employed for its removal. In some instances it disappears by degrees after a short space of time, whilst in others the result is not so fortunate, in consequence of which the patient and her medical adviser become mutually discontented at the issue, and she seeks advice in all quarters, but to no avail, until at last she abandons all treatment, and gives herself up a prey to despondency and despair, being fully persuaded that she is suffering from cancer or some such incurable disease; and as her general health remains unimpaired, she is regarded in the light of an hypochondriac by her unsympathizing friends, a state of things far more likely to aggravate matters than alleviate them. As the following remarks from the pen of that eminent uterine pathologist, Dr. James H. Bennet, bear much upon this subject, I think it may not be out of place here to quote them:—"Generally speaking, all uterine pains vanish when the disease of the cervix is cured. This is not, however, invariably the case. The pain in the back, more especially, may remain long after all trace of disease has disappeared from the uterus, varying in

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intensity without any tangible reason. The repeated application of large blisters will often permanently remove the pain; if not at first successful, their application will generally be found to be so in a few months later."

Now it is to the means of removing these harassing but not dangerous symptoms, as also for the cure of minor diseases of the uterus of a very chronic character, of ovarian irritation, after other more active measures have been employed, and for expediting the cicatrization of some ulcers, I would direct attention; but I must premise by saying, that what I am about to recommend is very simple in its application, is perfectly devoid of danger, either immediate or remote, and is never accompanied nor followed by any alarming symptoms. I do not, however, offer it as a panacea for all uterine complaints, but I wish merely to restrict its employment to the class of cases already detailed, in which I trust it will be as successful in the hands of others as it has been in mine.

From amongst other cases of uterine disease treated by me within the last eight months, I have kept notes of about two hundred and fifty; and in many of them I have pursued the plan of treatment now about to be recommended; but as the symptoms and other details in many of them were similar, and their recital would be tedious, I will only give a short sketch of a few, as a type of the remainder.

As it is familiarly known that leeches, when applied directly to the cervix uteri in inflammatory and other affections of that and neighbouring organs, act far more beneficially than when employed externally, and at a greater distance from the seat of the disease (as first enjoined by M. Guilbert),—so, as blisters, when used externally, act sometimes salutarily in the cases now under consideration,—may we not reasonably expect that their direct application to the offending viscus will be still more likely to be productive of good. Actuated by this, as well as other reasons, I have made trial of their efficacy, and I have not been disappointed in my expectations.

The plan I adopt for blistering the cervix uteri is as follows:—The parts are first brought into view by means of a speculum,—I generally use Ferguson's, but with moderate care any other will answer as well. They are then to be well freed from any mucous or other discharge by a dry, soft sponge,—sometimes the mucus is so adherent, particularly when exuding from the os, that it is necessary to damp the sponge for its removal; in all cases, however, the parts must be well dried; after which a concentrated solution of cantharides in sulphuric ether, mixed with the ordinary solution of gutta percha in chloroform, in the proportion of two parts of the former solution to one of the latter, is to be rapidly rubbed on the cervix by means of a camel's-hair pencil two or three times, according to the effect produced, as indicated by the appearance of the part, or by the sensations of the patient.

My first essay was with vesicating collodion, but as it caused great pain, both during its application and for hours afterwards, only ceasing on the appearing of the watery discharge, and as its operation was not sufficiently expeditious or efficacious, I had a strong solution of cantharides in chloroform, in which gutta percha was afterwards dissolved, prepared for me by Mr. Walsh, of Westland-row, which had the advantage of being painless during and after its use; but it was not so speedy in its action, nor so powerful in its effects as the collodion. Therefore, after consulting with several chemists in the city, I eventually applied to Mr. Williams (Dr. Butler's chemist), who, after having made several experiments, kindly presented me with a specimen of the preparation which I now use, and offer to the profession as being fully adequate to fulfil the indications required. It is frequently of advantage to keep open the blistered surface, and this is satisfactorily done by the weaker preparation in chloroform, which I denominate vesicating gutta percha, No. 2,—the ordinary one (vesicating gutta percha, No. 1) being rarely required for that purpose. For some days after the operation I direct vaginal injections of cold water to be used, and sometimes I wash over the parts with a weak preparation of nitrate of silver. At first I was in the habit of keeping open the blisters by some strong caustic, but I very soon learned that the weaker solution of cantharides answered the purpose better.

During the appliance of this remedy the patient experiences a pricking, stinging pain, together with a sensation of heat, sometimes amounting to burning—it is very bearable, and ceases almost immediately, indeed, in some cases she will not tell you of it unless you ask her; in others a sweet, pungent taste and smell are experienced, or an ethereal odour is perceived on her breath by another. Very frequently, in fact generally, small vesications appear at the time, and a watery discharge sets in within half an hour afterwards (which has a scalding sensation whilst passing), sometimes even before the speculum has been withdrawn. This discharge, starching the linen, and in other respects similar to that from blisters externally formed, lasts commonly for three days, when to it succeeds one of a slightly purulent nature, but not productive of pain. At this stage we shall find the epithelium thickened and raised, and coming off in patches, like bits of chewed paper; but, prior to it, vesications, like to those on the skin, are very plainly visible with their exudation. On more than one occasion I have seen a watery discharge produced by preparation No. 2, from a surface previously blistered, used to keep it open; and the same phenomenon has occurred on an ulcerated surface.

Blistering the cervix uteri does not cause any unpleasant sensations towards the rectum, bladder, or neighbouring organs. I never saw strangury or such like affection thereby induced; on the contrary, I have employed it more than once when vesical irritation was present, which, so far from being increased, was completely removed by two applications.

The average length of time for repeating this treatment is about six days, unless it be desirable to keep up the process; then, in that case, it would be about three days.

Case I.—Mrs. D., aged 34, of a strumous habit, several years married, but never pregnant, was under treatment for chronic inflammation of the cervix uteri, with endo-cervicitis, which gave way to local bleeding by scarification, the application of pernitrate of mercury alternating with a solution of nitrate of copper to the canal of the cervix, with the internal use of alteratives, cathartics, and tonics; however, pain in the left inguinal region, a symptom much complained of throughout the disease, persisted, resisting all treatment by medicine internally and externally, leeching, blistering, anodyne plasters, liniments, &c., for some months. I then, with a camel's-hair pencil, well saturated with vesicating collodion, brushed over the cervix uteri briskly for a minute or so, which caused great stinging, pricking, and burning pain through the pelvis, lasting for some hours; when a watery discharge of a hot, scalding nature, and starching the linen, set in and remained for one day, being then succeeded by one of a purulent character, but not causing pain or soreness in the parts. As the pain still remained, but less intensely, the blistered surface was kept open for a fortnight by powdered nitrate of silver, when it was permitted to heal up, the inguinal pain having been much lessened; but, as at the end of another week the pain was still persisting, I had recourse to the vesicating gutta percha No. 2, which did not cause pain, either during its application or otherwise. It produced the same phenomena as the collodion had done, but neither so quickly nor so actively. On the third day from its use, the pain which had given her so much annoyance had completely disappeared, and she has enjoyed better health ever since than she has had for many years before she submitted to treatment.

Case II.—Mrs. C., aged 47, of a very bilious temperament, married upwards of two years, but never pregnant, was under treatment for acute inflammation of the cervix uteri and vagina, supposd to be of a gonorrhœal character. The disease was removed by warm baths, local bleeding by the lancet, and nitrate of silver, the bowels being kept well open; still, a burning pain in the pelvis, sacrum, and down the thighs (at all times much complained of), persisted, in spite of all means employed for its removal. The vesicating collodion, and vesicating gutta percha No. 2, were used as in Case i., but there was not any relief until after two applications (at the interval of a week) of the vesicating gutta percha No. 1, the effect of which was kept up for about ten days by the preparation No. 2, at the end of which time she was quite well. Whilst the solution No. 1 was being used in this case, a slight pricking and stinging warmth was experienced, ceasing on the appearance of vesication, followed by a watery discharge which was evident before the speculum was withdrawn. On the third day after its use, the surface of the cervix was raw, like a blistered surface on other parts of the body; and the epithelium was in some parts thickened, whilst in others it was hanging detached, like chewed paper; a purulent discharge, mixed with water, then issued from the vagina, but produced no inconvenience.

Case III.—Mrs. B., aged 24, of a nervous temperament, married about two years, but never pregnant, came under my care, being affected with chronic inflammatory engorgement of the cervix uteri, with retroversion of the organ, and a great amount of tenderness in the right ovary, which was found to be enlarged, as discoverable by the vagina and rectum. Under appropriate treatment, as bleeding internally by scarification, and externally by leeches, external blistering, mercury with sedatives, the mouth being gently touched, warm hip-baths, cod-liver oil, iodide of potassium with sarsaparilla, and by regulating the bowels, which were confined and relaxed alternately, all disease was removed, and the womb resumed its natural position without the aid of any mechanical contrivance. Nevertheless, a fixed, lancinating pain in the sacrum and coccyx, with irritation in the ovary, remained, defying all treatment. The vesicating collodion was used once, and the vesicating gutta percha No. 2, four times at intervals of four and five days, during one month, at the end of which time all pain had left her.

Case IV.—Mrs. T., aged 30, of a sanguine temperament, married eleven years, had five children and two miscarriages, consulted me, as she was suffering from inflammatory engorgement of the cervix uteri, together with hypertrophy of the entire organ, and retroflexion, to which was superadded ulceration of the cervix, extending into its canal. By local bleeding, caustic potash, alteratives, absorbents, and finally, tonics, all were removed, except the retroflexion, of which she is not conscious, as it gives her no inconvenience. A dragging pain in the inguinal regions remained for some time, but gave way to one application of the vesicating collodion.

Case V.—Mrs. S., aged 39, of a nervous temperament, married seven years, but never pregnant, had chronic inflammation of the cervix, and simple ulceration, with endo-cervicitis, which gave way to treatment as in Case i.; however, a weakening, sickening pain in the back, sacrum, and loins remained, which resisted external blistering, &c., and only gave way to one application of vesicating collodion, followed by three of vesicating gutta percha No. 2, at intervals of seven and six days within three weeks.

Case VI.—Mrs. F., aged 40, of a bilious habit, mother of two children, was under my care for acute inflammation of the os and cervix uteri, with ulceration extending into the canal of the cervix, which was removed by local bleeding, caustics, mercurial ointment to the part, warm hip-baths, alteratives with taraxacum and cathartics; however, a pain in the left hip and lower part of the back, extending down the thighs, persisted, and only yielded to two applications of the vesicating gutta percha No. 1,—although the vesicating collodion, and vesicating gutta percha No. 2, had both been previously employed, without producing any beneficial effect. In this case the strong solution was reapplied in a fortnight from its first application, which latter had given some relief.

Case VII.—Mrs. A., aged 48, married many years, and has had children, was suffering from chronic inflammation of the cervix uteri, with simple ulceration, which yielded to local bleeding by scarification, caustics, alteratives, and tonics. A burning pain in the vagina persisted, and only gave way to two applications of vesicating gutta percha No. 2, at the interval of seven days, and one of vesicating collodion. The collodion in this case was used, as the vesicating gutta percha was found not to be sufficiently active.

Case VIII.—Mrs. C., aged 32, of a sanguine temperament, married fifteen years, but never pregnant, came under treatment for inflammatory engorgement of the os and cervix uteri, abdominal enlargement from flatus, and a tumour in the left epigastric region. The former was removed by local bleeding, warm hip-baths, &c.; and the latter has greatly diminished by purgatives for the flatus, and absorbents internally and externally for the tumour. However, shooting pains in the inguinal regions remained for some time, but at last disappeared, under the influence of direct blistering of the cervix uteri by vesicating gutta percha No. 2, three times employed within five weeks, at an interval of a fortnight. In this case, vesication was very apparent in one part, and peeling off of the epithelium in another, at the end of four days, the discharge being partly watery and partly purulent.

Case IX.—Mrs. K., aged 30, married some years, but never pregnant, of a bilious and nervous temperament, had a very acute attack of inflammation of the cervix uteri, with endo-cervicitis, and engorgement of the entire uterus. By local depletion, caustics, &c. (as in other cases now recorded), together with alteratives, cathartics, and finally tonics, warm hip-baths, &c., all disease, after a lengthened period, was got under; but a fixed pain in the sacrum, with pain and irritability of the stomach, persisted, defying all external as well as internal treatment; however, it at last yielded to direct blistering to the cervix uteri by means of vesicating gutta percha No. 2, three times resorted to within a period of a fortnight, at the interval of five days. In this case the phenomena attendant on blistering were well but slowly produced.

Case X.—Mrs. C., aged 26, of a sanguine and bilious temperament, a widow about one year, was married six months, and aborted when four months pregnant, since which time she has been suffering from inflammation of the vagina, os and cervix uteri, with aphthous spots in several places; there is suspicion of its being of a gonorrhœal foundation. External leeching, warm hip-baths, internal bleeding by scarification, caustics, alteratives, tonics, and cathartics with taraxacum, after a short time cured the disease, but a burning in the pelvis and severe itching in the vagina remained, causing great distress, and resisted injections, &c., but was eventually removed by one direct blistering to the cervix by the vesicating gutta percha No. 2.

Case XI.—Miss S., aged 22, of a highly nervous temperament, came from one of the eastern counties of Ireland to consult me in consequence of chronic inflammation of the cervix uteri, with endo-cervicitis and retroflexion of the uterus. The os was felt very low down, the vagina being short (congenitally); by treatment very similar to that employed in Case i.

all disease was removed, even the malposition; yet a weakening pain in her back, increased by standing, was very persistent; after three applications of the vesicating gutta percha No. 2, to the cervix in ten days, she lost all pain, and returned home shortly after, in the enjoyment of better health than she had for years.

Case XII.—Mrs. C., aged 32, of a strumous diathesis, married thirteen years, had one child. She came from an eastern county in Ireland to consult me, for what she said she had been told was polypus of the womb; however, on examination, I discovered anteflexion of the womb, inflammatory congestion of the entire viscus, and an enlarged ulcerated cervix with patulous os, ropy mucus tinged with blood exuding from it. She was successfully treated by depletion from the cervix, caustic potash, &c., together with tonics. A severe pain above the pubes, corresponding to the fundus uteri (which no longer remains anteflexed), was very troublesome, but was removed by three applications of the vesicating gutta-percha—one of No. 2, and two of No. 1—to the cervix in ten days, at the interval of four days. Vesication, followed by a watery discharge, was evident at the time of the first operation, four days after the pain was relieved, but I thought it better to repeat the remedy by preparation No. 2. At this visit there was a purulent discharge, and the epithelium was seen peeling off. During the two operations with the stronger preparation, she remarked to me, that she had an ethereal taste in her mouth which she felt coming up her throat, and which she also smelled. On the next visit she told me that evening her sister had remarked the ethereal smell off her breath. As she was not completely free from pain when I saw her again, I, for the last time, used the stronger solution, when vesication was produced very quickly, and so actively, that I measured half a drachm of a red serous fluid produced by the operation.

Case XIII.—Mrs. D., aged 40, of sanguine temperament, married twelve years, and mother of three children, consulted me in consequence of inflammatory congestion of the os and cervix uteri, which gave way to the ordinary treatment; but a pain and soreness remained in the right iliac region, which was removed, in six days, by one application of vesicating solution No. 1, followed, in four days, by the weaker preparation No. 2. On the third day, after the first blistering, the pain was much less, vesication was visible, with watery discharge, and also a slightly purulent one came from spots where the epithelium was curling up and being detached. During the use of No. 2 fluid she experienced a very sweet taste in the mouth. On the sixth day from the first operation, there was a purulent discharge, and the epithelium was much thickened in some places, and coming away like chewed paper in others.

Case XIV.—Mrs. W., aged 31, of a sanguine temperament, married many years, had three stillborn children at seven months, and two abortions, was under my care for extensive ulceration of the os and cervix uteri, together with inflammatory congestion of the entire organ, which were gotten under by the ordinary treatment; but a pain in the lower part of the back remained, which gave her great annoyance, and resisted all means used for its removal. It, however, gave way to two applications of vesicating gutta percha No. 1, in a fortnight. The stages incident on blistering were well established in this case.

Case XV.—Mrs. R., aged 27, of a very bilious temperament, married many years, had four living children and two abortions, the last about a fortnight since, came under treatment for chronic inflammation of the cervix uteri of a mild nature, together with simple ulceration of the os. She chiefly complained of great soreness above the pubes, extending into both iliac regions, with a sense of weight and bearing-down in the vagina, and great nervous excitement, with impaired digestion and bilious derangement. She had alteratives, tonics, and cathartics with taraxacum; and one application of vesicating gutta percha No. 1 (followed by its usual phenomena), removed all her pains, and rapidly cicatrized the ulceration in the course of a fortnight. In this case the symptoms ran very high, although the disease was not extensive, a circumstance we often remark in treating uterine affections,—the severity of the symptoms and the amount of disease being frequently in inverse ratio to each other.

Case XVI.—Mrs. D., aged 31, of highly nervous temperament, very much subject to hysterical laryngitis, married some years, but never pregnant, has been for two years suffering from chronic inflammation of the os and cervix uteri, giving rise to a purulent discharge, causing great irritation in the vagina. She complained very much of a burning pain in right iliac region, and itching in the vagina, for which she had much advice, without any benefit. I employed the usual treatment for such cases, but with very trifling beneficial effect—reducing the disease to a certain stage when it became stationary; it then occurred to me that blistering the cervix uteri might be productive of good, which I did by means of No. 1 preparation, and I then kept up its effects by No. 2 solution for about ten days, at the end of which time the pains had quite left her; and she is now able to go about, as she was before she got ill. Both the stages consequent on blistering were well established, and lasted long in this case.

Case XVII.—Mrs. K., aged 40, of a bilious temperament, came under my care for extensive ulceration of the os, together with inflammatory engorgement of the cervix, and hypertrophy of the uterus, which were cured by local depletion, caustic potash, nitrate of mercury, &c., together with alteratives and cathartics with taraxacum; however, after all disease was gotten under, a fixed pain in the right groin remained, in spite of all remedies. It was, however, eventually removed by one application of the vesicating collodion, the blistered surface being kept open by powdered nitrate of silver for about a fortnight; and after its healing, a second blistering was produced by vesicating gutta percha No. 2, after which she was well.

Case XVIII.—Mrs. C., aged 36, of a highly strumous habit, never pregnant, consulted me for chronic inflammation of the cervix uteri, causing great pain in the back, and a great amount of vesical irritation. In conjunction with appropriate constitutional treatment, blood was taken from the affected part by the lancet, which reduced the inflammation, but did not remove her troublesome symptoms. I then employed the vesicating gutta percha No. 1, as heretofore described on two occasions, which completely cured her of all her complaints. The process of vesication, &c., was well established here, and yet the vesical irritation, instead of being aggravated thereby, was, after the first operation, greatly relieved, whilst it disappeared completely after the second.

Case XIX.—Mrs. G., aged 28, came under my care for chronic inflammation of the cervix uteri, with abrasion of the anterior lip of the os, extending into the canal of the cervix. Under the usual treatment she lost all her complaints, with the exception of a fixed and burning pain near the umbilicus, which gave way to one blistering by vesicating gutta percha No. 1.

Case XX.—Mrs. G., aged 36, of a sanguine temperament, many years married, has had eight children. She came under treatment for inflammatory ulceration of the os and cervix uteri, which she seemed to think had a gonorrhœal origin. What chiefly annoyed her was a cold gnawing and dragging pain above the pubes, extending to the left inguinal region. The stomach and bowels, which were out of order, were regulated, the inflammation was reduced by scarifying the cervix, and by two applications of the vesicating gutta percha No. 1

at the interval of ten days, the ulceration was healed up, and all her troublesome pains and aches had disappeared.

In the "Bulletin Général de Thérapeutique," for July, 1856, M. Aran speaks largely of the advantage of direct blistering to the cervix uteri, so much so, that any one who had not tested the subject for himself would be led to believe that there is not any non-malignant disease of the womb which is not curable by such means. Notwithstanding his *six months*' experience, *on a large scale*, of the remedy, he has published only four cases, in not one of which, to my judgment, was a perfect cure established; certainly, the symptoms were relieved, not removed, and as the cause producing them was left behind, doubtless in a longer or shorter time the disease will reappear. Had other means, as in my cases, been previously used by M. Aran, I think we may safely predicate that they would have turned out eminently successful. M. Aran evidently has not been so fortunate as I have been in seeing the different stages of the process in the order of their occurrence, or even well at any time, for he says:—"In consequence of the intimate adherence of the epithelium to the tissue of the cervix, and, perhaps, also on account of its thinness, it is rare to find on the cervix a true vesication in every respect like to what we see on the skin; it is with difficulty I have been able sometimes to make out one or two small blisters full of cream-coloured serum, but instead, the epithelium is thickened, puckered, and opaque, and is easily detached in some cases, but less than the epidermis; and the limit of the application of the blisters is indicated by a bright red bordering, which contrasts with the paleness on the clear rose colour of the part of the cervix which has not been affected by the blister." This description would answer pretty well for my second stage, where the discharge is purulent.

M. Aran's mode of operating, I think, fully accounts for his not having seen my first stage, or that of vesication. He thus describes it:—"The cervix uteri having been brought into the field of the speculum (a full one), and well cleansed from all mucous and other discharges, a circular portion of Albespeyrre's plaster, cut to the size of the part, is to be applied with a long dressing forceps, and pressed well back against it. To insure a perfect coaptation it is well to cut the edges of the blister; a large ball of charpie, having one of its extremities dipped in common collodion, is then to be brought in contact with the plaster, and retained there by two or three balls of dry charpie. The speculum is then to be withdrawn, keeping the plug in situ by the forceps. The use of the collodion is to support the blister, in giving a degree of hardness, in allowing it to adhere to the neighbouring parts." "The blister is to be retained for twenty-four or forty-eight hours. The patient must remain in bed for the first eight or ten hours after the operation, failing which the blister becomes misplaced, takes unequally on the lips of the cervix, or on the vagina, and in women whose vaginal orifice is very large it may fall off some hours after its application. The collodion causes a slight smarting and very transient burning, and in four or five hours afterwards the blister causes a sensation of pricking, smarting, and heat, even amounting to burning in the pelvis, and remaining for hours till the discharge occurs, which lasts sometimes as long as the plug is left,—in removing which, to save yourself and your patient from the fetid odour which it exhales, you ought to have a vessel of water at hand to throw it into. In some cases," M. Aran says, "where the irritation has been a little more sharp, I have washed the parts over with laudanum." He likewise states—"that where the vagina or cervix is bathed in an abundance of mucous and other discharges, blisters do no good, and do not even take."

For the following reasons I think I can with safety affirm that my plan of producing the desired effect is far preferable to the one just now detailed:—

Firstly. It is more simple, and more quickly performed.

Secondly. There is no necessity for keeping our patient in bed; on the contrary, she may go out immediately after.

Thirdly. The burning sensations, which are only *once* produced, last but for a minute or so.

Fourthly. The vesication, and its consequent watery discharge, is always produced within half an hour, indeed sometimes whilst operating.

Fifthly. Soothing or sedative washes are never required.

Sixthly. It can be had recourse to in the cases not admissible by M. Aran.

Seventhly. The retention of a plug for so long a period in the vagina, producing such consequences as he describes, would be likely in certain habits to cause irritative fever, if not phlebitis, or some such fatal disease.

From my experience of the treatment now under consideration, I would draw the following deductions:—

1. That minor idiopathic affections of the uterus and ovaria are curable by blistering the cervix uteri.

2. That symptomatic and sympathetic pains at the decline

of uterine and ovarian diseases, and after the cure of those affections, are removable thereby.

3. That ulceration of the cervix uteri sometimes quickly cicatrizes under this treatment.

4. That the phenomena attendant and consequent on blistering the cervix uteri are similar to those produced on other parts of the body.

5. That it is an operation completely devoid of danger, and that it does not cause any unpleasant symptom towards the rectum, uterus, or other neighbouring organs.

6. That irritation of the bladder is not necessarily a barrier to blistering the cervix uteri, as this unpleasant symptom is sometimes removed by it.

7. That enlargement of the cervix or body of the uterus from engorgement, or hypertrophy, is not removable by blistering the cervix alone, but that it acts well sometimes in such cases as an adjuvant to other treatment.

8. That the best and most speedy way of blistering the cervix uteri is by a strong solution of cantharides, well and quickly rubbed in with a camel's-hair pencil.

9. That the combination of some sedative or anodyne with the blistering fluid is essential to prevent pain.

10. That chloroform, with gutta percha, is preferable to any other medicament for combining with the blistering fluid, as in the first instance it increases its vesicating powers, and afterwards relieves and removes the pain thereby induced.

Art. XIII.—*Modification of Professor Syme's "Staff Director" for Urethral Section in certain forms of Stricture.* By Christopher Fleming, M.D., M.R.I.A., Surgeon to the Richmond Hospital; Examiner on Surgery in the Queen's University; Member of the Court of Examiners in the Royal College of Surgeons, Ireland, &c.

At the last meeting of the Surgical Society I exhibited a staff director, which I have been in the habit of using for the last twelve months in those cases in which Professor Syme's operation for the external division of stricture appeared to be advisable. Such cases are in this city, at all events, few indeed, and yet I have no hesitation in stating that forms of stricture are being daily met with, which cannot be elsewhere surpassed in severity or in complexity. On the present occasion I do not wish, however, to enter into any particulars respecting the advisability of this operation, or to hazard an opinion as to its results. I will merely add, that I have, perhaps, performed it more frequently than any other hospital surgeon in this city, and that I cannot bring to my recollection even one case where I have witnessed, in private or in hospital practice, "Syme's urethral section" operation, properly so called, although I have been present where it was nominally performed. This statement I make advisedly, as it is all-important, in estimating the value of this able surgeon's suggestions, that his special directions should be accurately followed. The instrument which I beg to recommend is merely a modification of others already in use. With it, in fact, a combination of the objects contemplated by Professor Syme with his grooved staff director, and those by Mr. Wakley with his guide and flexible tube, is accomplished. It consists of a solid steel rod, twenty-two inches or so in length, similar to that of Mr. Wakley's guide—like it, curved at one extremity, and ranging at No. 2 on the ordinary catheter scale, so that his movable handle is easily adjusted to it. It is, moreover, also divisible, for conveniency of carriage, into two portions joined by a screw. About 2 inches from its curved or vesical end, a groove commences on its convex aspect, which extends from 5 to 6 inches, towards the external or proximal. When ready for use, its movable handle being firmly fixed, it is passed into the bladder, and the section of the urethra made according to the directions laid down by Professor Syme. Before it is removed, a flexible tube is passed over it, and by a double movement the latter is substituted for the staff, and secured in the bladder. The tubes I have used range between Nos. 6 and 8, and their easy transit satisfies the surgeon as to the required section of the stricture.

The advantages of such a provision for the safe conducting of a catheter in urethral section, no matter with what object demanded, must be obvious to every practical surgeon; and all must admit the great annoyance, nay more, failure, experienced or witnessed in the most expert hands, when catheters are being, under such circumstances, introduced into the bladder. Even in urethral section in front of the scrotum, this contingency will occur. A tubular silver catheter might be constructed to answer the above purpose; but I must acknowledge my experience, such as it may be, is favourable to the gum-elastic for the purpose contemplated.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Mechanism of the Gubernaculum Testis. By John Cleland, M.D. Edinburgh: Maclachan and Stewart. 1856. 8vo, pp. 40.

Recherches sur les Monorchides et les Cryptorchides chez l'Homme Par M. Ernest Godard. Paris: Masson. 1856. 8vo, pp. 38.

The first, a small but valuable work, embracing the results of Dr. Cleland's researches on the reproductive glands in general, and the structure and functions of the "gubernaculum testis" in particular, has had its origin in the honourable custom of the Edinburgh University, for the last twenty years exactly, to mark with a gift of distinction the most worthy "Thesis" presented by candidates for the degree of medicine prior to graduation; and the several essayists who have received the gold medal have abundantly proved, by their subsequent contributions to literature, that it requires a degree of merit ranging far above mediocrity to obtain an honour which must now be allowed to rank with the highest University distinctions. But whilst we admire the wise discretion displayed by the governing powers of the Edinburgh University, in recognising the force of emulation to urge labour, incite industry, and induce perseverance, it leads us to reflect seriously, and perhaps sadly, on the organization of our Irish institutions in this particular respect, as they manifestly throw no small amount of discouragement in the path of the industrious but ambitious student.

If we examine the governmental organization of the Irish corporations, either granting a license, or conferring degrees, legalizing the individual practice of medicine and surgery,—the absence of any reward or honourable distinction calculated to inspire a just feeling of emulation constitutes a conspicuous characteristic of their educational ordinances. All candidates, without distinction or difference, who are esteemed qualified after being subjected to the ordeal of examination, receive an equal testimonial, conferring the same powers, and conveying the idea of an exactly similar amount of value, irrespective of the higher attainments which many candidates evince in comparison with those of more ordinary ability. To us this seems to be a most exceptionable system, not less anomalous as a rational practice than injurious to the spirit of enthusiasm, that impels the ardent student to prosecute those abstract branches of medical investigation, whose material rewards are inversely proportioned to their literate honour as original contributions. We conceive that the present opportunity is now favourable for reconstructing those collegiate rules, and creating a system more in accordance with the prevailing spirit of the hour, whose tendency is to render the principles of competition paramount in every department of science. We are well aware that many eminent men entertain conscientious objections to prizes, honours, or rewards of any description, inasmuch as they may be instrumental in developing mercenary tendencies on the part of students; but such ideas are merely visionary, deduced rather from a morbid suspicion of the failings of our nature than from the more healthful contemplation of those purer elements that govern the mind refined by cultivation, and spiritualized into a self-sacrificing intensity of purpose by the grandeur of the object to be attained, and the benefits it may confer on society in general.

It is not the absolute intrinsic value which renders the gift of moment to the student, its real value is represented by the fact of superior proficiency which it implies. A simple medal represents but little to excite the avaricious, or induce a sordid desire for its possession, but, as the impress of the solemn adjudication of the eminent men, who form the several courts of examiners, to superior merit, it would become honourable, not only from the source from which it proceeds, but also from the admitted ability of the candidate on whom it has been conferred. Already the "Pathological Society of Ireland," to which the school of Dublin is deeply indebted for its practical character, has recognised the utility of the views which we advocate, and for the last four years has conferred a gold and silver medal on the most valuable essay contributed by a student on a subject announced at the commencement of each session. And we are ourselves cognizant of the number of students who have been induced by this wise and generous provision to adopt a system of close and accurate research, thus imbibing habits of investigation, which they have maintained in the more mature periods of that protracted competition which the progress of professional life always implies. The Queen's University has likewise recognised the value of honourable distinctions, and grants at each degree examination medals and gratuities to the most distinguished candidates in each class; and we are personally aware of numerous cases where the largest amount of enthusiastic energy has been put into requisition to obtain the first rank in this infant institution. How much greater would the zeal and perseverance be enhanced if students could indulge in the hope, that in those ancient institutions, whose existence as seats of learning, as temples of science, have conferred honour and dignity on our country for centuries, their labours would be rewarded, their attainments appreciated, and their laudable ambition cherished by the approbation of those men representing the profession they are taught to respect, and the institutions they are expected to honour. We trust that the period is not far distant when a well-digested system of rewards will form a marked feature of collegiate legislation; and that we, as journalists, will not again labour under the painful necessity of instituting invidious comparisons between Irish and Scotch educational ethics, particularly if, in the conscientious discharge of that duty, our remarks must be detrimental to the practical character of our own country.

Dr. Cleland commences his essay by a brief description of the developmental evolution of the generative structures, deducing his account from the fœtal parts of an embryonic sheep, and similar observations on the organs in the more advanced stage in the fœtal calf. Having insisted on the permanent relations always subsisting in the vertebrata, between the generative and urinary apparatus, and likewise on the close structural alliances between the latter and the "Wolffian bodies," he asserts that the reproductive organs, whether vesicles or ovaries, make their first appearance along the internal borders of the Wolffian bodies, as white parallel streaks on either side of the spinal column. These cannot be prolonged by continuity from those bodies, as the ducts differ in diameter; therefore, the author very properly rejects this supposition as to their origin, although it is insisted that such must be the case by Rathke and Arnold, whilst he supports the more consistent view that a separate and distinct blastema is prepared for their evolution. The testicle, then, assumes a rounded form, the central cavity being occupied by a formative blastema, which arranges itself in transverse bands. The organ is now an independent structure, wholly surrounded by peritoneum, which forms a "mesorchium," that connects it to the Wolffian body, and in this fold the spermatic artery is developed. On the outer side of the Wolffian body the so-called Müllerian duct appears, which below comes into apposition with the efferent tube of that organ, a fact which has probably led Rathke and Kobelt to confound the Wolffian and generative ducts as identical.

The superior extremity of the Müllerian tube terminates in a convoluted body, which again becomes united with the testicle, completing the communication of the efferent ducts with the gland, forming the "coni vasculosi" and head of the epididymis. These ducts of Müller in the female constitute the Fallopian tubes, and by uniting at their inferior extremities create the uterine cavity. In the human subject the hydatids of Morgagni are formed by atrophy of the Wolffian bodies, whilst in the female they form the "parovaria" of Rosenmüller. Finally, Kobelt conceives that the upper portion of the Wolffian body contributes to the formation of the Morgagnian hydatids, and the lower part constitutes the vas aberrans of Haller.

In this brief abstract of the author's views we have endeavoured to simplify a most obscure phase of organic evolution, which has occupied the attention of physiologists during the past two centuries, and the difficulties attending this investigation are so numerous that it does not surprise an anatomist that the opinions of the most unprejudiced observers should bear the stamp of conflicting testimony. On this account we have rather condensed than criticized Dr. Cleland's views on the subject, which seem faithfully related, judiciously arranged, and accurately described.

The second chapter treats more immediately of the subject forming the title of the essay—"The structure of the gubernaculum testis" and its anatomical peculiarities. Having cursorily detailed the observations of Hunter on the subject, and drawn attention to the various imperfections in the description of this structure by its distinguished discoverer, he then alludes to the opinions of the earlier anatomists, as Pancera and Girardi of Parma, who recognised the ascending cremaster; the former having published a work on the descent of the testis in 1778; and Brugnoni, absolutely about the same period, attributes the descent of the organ to the agency of those muscular fibres,—an opinion in which he is followed by Robin and also by Curling in his recent monograph on the Structure and Disease of the Generative Gland. Finally, the author directs especial attention to the views of E. H. Weber, who also describes an ascending cremaster, but attributes the descent of the testicle to a structure which he thus describes:—

> "'This vesicle,' he says, 'grows with its upper part into the abdominal cavity, and drags asunder the lamellæ of the peritoneal fold in which the testicle is hung as in a purse, and bears on its muscular fibres, which are given off from the internal oblique muscle upwards to near the inferior extremity of the testis. Hence it is clear that the part called the Gubernaculum by Hunter is not a solid cord, but that it is a bladder overlaid with muscular fibres. The under part of the bladder grows downwards from the inguinal canal into the scrotum, drags asunder the cellular tissue, and prepares a way for the testis, before that organ has left its place. Thus there exists a large bladder, which is narrowest in the middle where it lies in the inguinal canal, whose upper part projects into the abdominal cavity, is broader, and overlaid with muscular fibres, which pass upwards from the internal oblique, and cover the bladder in oblique and transverse directions; while the under part of the bladder, which is still wider, is not overlaid with muscle, and descends into the scrotum. The descent of the testis is effected thus:—The upper part of the bladder, with the adhering peritoneum, is shoved into the lower part, which passes down into the scrotum, just as you can shove the one-half of a nightcap into the other.'"

We have, on many occasions, sought for this peculiar vesicular structure described by that learned histologist, but our examinations have always been unavailing. We therefore fear that a preconceived opinion has tended to prejudice the views of Weber, and induced him to describe structures, rather as they should exist according to his ideas, than as they appear in the normal arrangement of the human body. Not that we would accuse one who has contributed so much to the advancement of scientific inquiry of a wilful desire to convert apparent states into real and unchangeable conditions; but in the prosecution of anatomy there are difficulties to contend with, as, for instance, the age, the state of decomposition, and the mode of preparation of the subject, which so materially influence original inquiries that investigators may, without incurring the charge of misrepresentation, mistake truth rather than pervert it, and confound "the transient features of the shadow with the unchangeable evidence of reality."

The author gives the results of seven dissections of fœtal structures, and concludes from those observations, that there has been a large amount of error in all former descriptions of those peculiar tissues. In the first place, the fibrous band described as passing from the testicle to the scrotum is imaginary, and this portion arises from the fascia of the groin, from the tendon of the external oblique, and a few fibres of the internal oblique muscles; this passes down to the scrotum, and ascends through the external ring to be attached to the "plica gubernatrix;" and the intra-abdominal portion is constituted by the fibrous layer of the peritoneum with the ascending fibres of the internal oblique forming the cremaster. Now, with every desire to deal leniently with the efforts of original research, we must say that a certain degree of ambiguity renders an otherwise minute description open to exception, and fairly the subject of legitimate criticism. All demonstrative subjects, however minute in their description, should be simple to be understood, and clear to be remembered. Here, then, is the summary of these observations in the author's own language:—

> "In conclusion, the sum of the structure of the gubernaculum is this: It consists of two essentially distinct parts; *firstly*, the structure descending in advance of the testis—viz., the processus vaginalis and its plica gubernatrix; and, *secondly*, a fusion of the parts forming the wall of the abdomen,—fibres passing downwards from the peritoneum, upwards and downwards from the internal oblique muscle and the aponeurosis of the external oblique, and upwards from the fascia and integument. The first portion pushes its way down through the second, and disperses it, and afterwards, as the plica gubernatrix contracts, the testicle reaches the bottom of the scrotum."

Frequent opportunities have occurred to us, which we have taken advantage of, to trace the description of Mr. Curling in relation to the cremasteric apparatus, and we have invariably confirmed his statements on this subject; and we are confident that, although Dr. Cleland has advanced somewhat beyond him in his observations, further experience will tend rather to reconcile his views with those of preceding authors than create a difference which exists only in a degree, not in fact.

In conclusion, we would draw especial attention to the judicious observations of the author on the cause of the descent of the testicle, and the influence of its permanent position on its normal functions as a secreting organ, and we trust that he will continue an investigation which opens a wide and extensive field for the exercise of those inductive powers which he has already displayed in the essay before us.

M. Godard, in a memoir presented to the "Biological Society of Paris," at its "séance" in March, 1856, has detailed the results of forty-two cases of abnormities of the testicles. Many of these are familiar to the readers of this Journal, and many more to those acquainted with the last edition of Mr. Curling's work, which contains some curious examples that seem to have eluded the researches of the author. However, we accept the labours of M. Godard as a most useful contribution to the literature of the subject, and one that will save its possessor from the expenditure of much labour in discovering extraordinary cases of testicular abnormities.

A Review of the Present State of Uterine Pathology. By JAMES HENRY BENNET, M.D., &c. London: Churchill. 1856. 8vo, pp. 99.

THIS essay by Dr. Bennet has been partly written, as we are informed, "to obviate the necessity of entering the polemical arena in any future editions" of his "Practical Treatise on Uterine Inflammation;" from the editions of which already published he has intentionally excluded all controversy. The book contains Dr. Bennet's views relative to this much-vexed question; also, the opinions of others who are opposed to, or at variance with, him; and, besides, all those arguments which Dr. Bennet thinks most conclusive for the establishment of his particular tenets. We shall endeavour to present our readers with a short review of its arrangement and contents.

After some preliminary observations, the author gives a complete sketch of uterine pathology, in which are embodied his particular ideas, otherwise his *professed views*, and which we have no doubt are pretty well known to the profession: however, as they seem to be contained in the few following words, we cannot do better than transcribe them. He says:—

> "Inflammatory lesions occupy the most prominent position, and by their presence are explained most of those forms of confirmed vital and functional uterine derangements which were formerly considered to be morbid entities, and described under the names of leucorrhœa, amenorrhœa, dysmenorrhœa, menorrhagia, &c."

In other words, we would suppose him to mean, that leucorrhœa, &c., exist not as diseases *per se*, but their presence is explained by inflammatory lesions; that they are, in fact, the consequence of inflammation, and do not originate without some inflammatory action. In the same manner, Dr. Bennet considers ulceration of the os and cervix uteri, not as a disease existing *per se*, but as the result of inflammation. Having briefly stated his case, the author next proceeds to classify his opponents, and he separates them into two groups. One, those who deny the existence of inflammatory and ulcerative lesions of the neck of the uterus, and the necessity of surgical treatment altogether; or who, admitting the possibility of those lesions, yet ignore ulceration, and consider instrumental examination unnecessary, or even prejudicial. The other group, those who admit all the lesions of the cervix and body of the uterus, yet are opposed to the author as to their origin, symptoms, and importance, "denying that they exercise that influence over the general health" which Dr. Bennet has ascribed to them, or denying that they require the surgical treatment which he states "to be so frequently indispensable."

Amongst those who deny the existence of inflammatory ulceration of the neck of the uterus is Dr. Robert Lee, of London, and to the views entertained by that gentleman Dr. Bennet first alludes. A paper which was read by Dr. Lee before the Medico-Chirurgical Society in 1850, is quoted, wherein its author remarks:—"In cases of obstinate leucorrhœa, I have often employed the speculum in married women, after I had failed to detect the existence of disease by the ordinary mode of examination. In some of the cases there has been seen an unusual degree of redness of the os uteri, sometimes affecting the whole, and at other times limited to the inner margin, with or without swelling. The white viscid discharge has been seen issuing from the os uteri. I have never seen ulceration of the orifice of the uterus in such a case." And again, in the same paper:—"Neither in the living nor in the dead body have I ever seen ulceration of the os and cervix, except of a specific character, and especially scrofulous and cancerous." Now, though Dr. Lee has thus asserted, emphatically, that he has never seen ulceration, except of a specific character, of the os and cervix, still Dr. Bennet very naturally observes, that he (Dr. Lee) has seen what he (Dr. Bennet) calls ulceration; as is evident from the following passage, which Dr. Bennet has taken from the same source as the last:—"At other times, both the lips are swollen, nodulated, and fissured, and the mucous membrane covering them intensely red, with an appearance of superficial excoriations, or granulations, which are elevated above the surrounding surface. These apparent granulations are usually considered and treated as ulcers of the os and cervix uteri, but they do not present the appearance which ulcers present on the surface of the body, or in the mucous membranes lining the viscera, and they are not identical with the granulations which fill up healthy ulcers. They present the appearance often observed on the tonsils, which are said to be ulcers, and are not."

Well, then, the question arises,—What is an ulcer; what constitutes an ulcer? Dr. Bennet considers a pus-secreting granular surface, denuded of epithelium by destructive inflammation, upon a mucous membrane, should be called one, and this is what he does call one. Consequently, according to Dr. Bennet, Dr. Lee has seen a simple ulcer of the os and cervix uteri; and if his (Dr. Bennet's) definition of an ulcer be correct, Dr. Lee and himself differ merely in terms. This appearance, be it what it may, Dr. Lee considers not only of no pathological importance, but, besides, of rare occurrence.

With regard to the question of importance, it is set aside for the present, and our author proceeds to remark upon Dr. Lee's opinion of the rare occurrence of this appearance.

Dr. West, of London, who, it appears, agrees with Dr. Lee as to the pathological insignificance of this appearance, which Dr. Bennet calls ulceration, still does not bear out Dr. Lee in the assertion, that such is of rare occurrence. To show this, Dr. Bennet takes up Dr. West's Croonian Lecture for 1854, in which he finds, that of 268 patients examined by Dr. West at the Middlesex and St. Bartholemew's Hospitals, ulceration, or the appearance above described, was seen in as many as 125 instances.

Dr. West is placed by the author at the head of the second category of his opponents; and, after his experience has been alluded to, Dr. Bennet proceeds as follows:—

> "Dr. West does what I have constantly implored all who presume to give an opinion on the subject to do: he looks, he examines for himself; and what does he find? 125 cases of ulceration in 268 women examined. If we eliminate the cases of healthy uterus, we find the proportions to be as follows,—ulcerated, 125; non-ulcerated, 110; that is, more than half the patients examined presented ulceration. . . . . In 300 cases," continues the author, "examined by myself at the Western General Dispensary, and reported in my work, the proportions were:—ulcerated, 222; non-ulcerated, 78; that is, not quite three-fourths presented ulceration. The difference between—more than half, and less than three-fourths—is not one which, in a statistical inquiry of this nature, invalidates results. Dr. West's figures prove the extreme frequency of ulceration in women suffering from symptoms of uterine ailment just as forcibly as mine; the slight discrepancy would admit of easy interpretation, were it desirable to enter into the subject. Amongst other causes, it may depend on the less degree of severity with which symptoms were scanned and weighed before an instrumental examination was decided on. . . . . What more conclusive answer," says Dr. Bennet, "than the above facts can be

made to Dr. Robert Lee, when he states that he has never seen an inflammatory ulceration of the uterine neck? Surely I need not pursue any further the refutation of this remarkable assertion."

Dr. Bennet considers that this appearance, above described, over the os and cervix, is an ulcer, the result of inflammation; that it is of frequent occurrence; and that, so far, he has been corroborated by the evidence deduced, not only from his own experience, but from the writings of Dr. West, as to the frequency, and even those of Dr. Lee himself, as to the reality of its existence.

But though Dr. West has, by his researches, proved the frequency of ulcerative lesions of the os and cervix uteri, yet he does not consider such lesions to be of any pathological importance. The author informs us that Dr. West draws his conclusions from such facts as the following:—

"First. He, Dr. West, examines 40 females affected with venereal disease, on the day of their admission into the venereal wards of St. Bartholemew's Hospital: 18 were suffering from gonorrhœa alone; 10 from gonorrhœa and syphilis; and 12 from syphilis only. Of these 40 patients, *thirteen* presented ulceration: in 10 it was mere excoriation; in 3 the ulceration was more extensive; 'and here,' concludes Dr. West, 'be the cases of ulceration of the os uteri what they may, sexual excesses, at any rate, have no great share in their production.'

"Second. Dr. West gives the result of a careful examination of the uteri of 62 females who died in the medical wards of St. Bartholomew's Hospital, of other than uterine disease. Of the whole number, 43 were married, or were supposed to be so; and 19 were believed to be virgins. The uterus was healthy in 33; diseased in 29. Of the latter, there was ulceration in 17; induration of walls of uterus, without ulceration, in 5; disease of lining membrane of uterus, without ulceration, in 7. And this evidence, instead of substantiating the opinion that they (the lesions) are of great importance, rather, in Dr. West's mind, militates against that supposition."

With respect to the first conclusion propounded from the statistics laid down by Dr. West, Dr. Bennet considers—when out of 40 women positively exposed to sexual intercourse, ulcerative lesions are found in 13, or one-third, and that to a more or less marked degree—that the presence of such are not satisfactorily explained by the existence of either syphilis or gonorrhœa, and that he is warranted in coming to a totally different conclusion from Dr. West. In reply to Dr. West's second laid down statistical conclusion, deduced from the 62 post-mortem examinations,—namely, the pathological non-importance of inflammatory lesions of the uterus,—Dr. Bennet remarks, that he, on the contrary, is, for the same reason, only more strongly convinced of their importance; "since the existence, unrecognised and untreated, of a large amount of uterine disease in the female population, is an indirect cause of death," and that, inasmuch as these inflammatory lesions are of their nature debilitating, "through their reaction on the functions of digestion and nutrition;" and, when not treated, tend to induce a state of "debility," "anæmia," and "deficient vital energy," they must render a female incapable of resisting disease. *En passant*, allusion is made to the statistics of Dr. Boyd, as quoted by Dr. Lee. Dr. Boyd, it seems, examined 708 uteri, without discovering an instance of inflammatory ulceration; but found:—Cancer, 21 cases; bony or fibrous tumour, 31; dropsies of the ovaries, 13; puerperal cases, 24; and 3 of simple enlargement; therefore, Dr. Boyd concludes that ulceration of the neck of the womb is of rare occurrence.

Again, the author, quoting Dr. Lee, alludes to the examinations of Mr. Hewett and Mr. Pollock, who ran over as many as 900 uteri at St. George's Hospital, and who never came across a single example of simple ulceration of the neck or mouth of the womb, and who, consequently, arrived at the same conclusion as Dr. Boyd:—

> "At the time these statements were first published," remarks Dr. Bennet, "and were brought forward as a proof that pathological anatomy gave no evidence even of the existence of a morbid condition, said by me to be of such frequent occurrence during life, my reply was:—That mucous membrane lesions had not been found after death, because they had not been sought for, as had often before been the case in the history of pathological anatomy. The observers whose results were so confidently appealed to by Dr. Lee—observers whose talents and integrity I esteem greatly—were looking for bony and fibrous tumours, for dropsies and cancerous degenerescence, and they found them. They were not looking for inflammatory ulcerations, and they did not find them. I could bring other valuable testimony forward to corroborate the results arrived at by Dr. West, who, being alive to the existence of ulceration, *was* looking for it, and found it."

The author does not fail to call attention to the following curious fact in medicine, viz.:—Dr. Lee ignores the existence and pathological importance of ulceration, because *he does not* find it after death; and Dr. West considers it pathologically insignificant, because *he does* find it after death.

Dr. Bennet now takes up Dr. West's denial of the pathological importance of inflammatory ulceration of the neck of the uterus, and fully analyzes it. He quotes the following paragraph from Dr. West's Lectures:—"The really important question is, whether ulceration of the os uteri is to be regarded as the first in a train of processes which are the direct or indirect occasion of by far the greater number of the ailments of the generative system; or whether, on the other hand, it is to be considered as a condition of slight pathological importance, and of small semeiological value; a casual concomitant, perhaps, of many disorders of the womb, but of itself giving rise to few symptoms, and rarely calling for special treatment?" This quotation Dr. Bennet calls "the key" to Dr. West's Lectures; and considers that the first part of the paragraph may be deemed as a statement of the views which Dr. West attributes to his adversaries, "of the scientific error he thinks he has to encounter;" and that the second portion of the paragraph is "a concise enunciation of the opinions with which Dr. West rises from the investigation." Now, Dr. Bennet asserts, that Dr. West has made a fundamental error "at the very threshold of inquiry." If Dr. West will substitute the words, "inflammation of the neck and body of the uterus and their sequelæ," for the words, "ulceration of the os uteri," Dr. Bennet will "accept his proposition as a true exposition" of his (Dr. Bennet's) opinions. But by using the words, "ulceration of the os," &c., Dr. West is considered by our author to "wrestle with an imaginary enemy;" for neither he nor any one else regards ulceration of the "os a disease existing *per se*," but, like the ulceration of any other part, depending on, and the result of, inflammation.

> "On the contrary," he says, "all who have written on the subject have spoken of ulceration, and described it as the result of the inflammation which, invariably, necessarily precedes and accompanies it, and which may exist without it, for years, in the uterus or elsewhere."

Then comes a denial, by Dr. Bennet, of the statements deduced from Dr. West's lectures:—First, that ulceration of the cervix is of slight pathological or semeiological importance; second, that it rarely calls for "special treatment;" and third, that it does not appear to exercise any particular influence over sterility, or the production of abortion.

With respect to the influence of ulceration in inducing sterility and abortion, Dr. Bennet considers, that if for a considerable length of time he has been constantly consulted by young, sterile, married women, in whose history he could gain evidence of uterine mischief either soon after or previous to marrying; if, on examination, he finds some inflammatory lesion; and then, having treated and cured the disease, if these women become fruitful, he is warranted in considering the local disease the cause of sterility.

Again, in those cases in which sterility for years has ensued subsequent to tedious or instrumental labours, owing to the remains of uterine suffering; if this condition is found connected with local inflammation, and having been removed by treatment, if, in many instances, pregnancy again occurs, "am I not," exclaims Dr. Bennet, "warranted in considering the temporary sterility of these women occasioned by the temporary local disease?"

> "If, on the other hand, I find women who are continually aborting or miscarrying, are generally suffering from symptoms of uterine ailment, and present, on examination, local inflammatory lesions, mostly inflammatory ulcerations, and if, on thoroughly removing these lesions, I find that a large proportion at once go to full time, and are delivered of live children, am I not warranted in concluding, that in these females the existence of the inflammatory disease was the cause of the abortions, and of the premature termination of the pregnancies?"

Dr. Bennet repudiates all figures, all statistical results, as compared with the results of his actual practice.

Next follows the repudiation of Dr. West's doctrine, that inflammatory ulceration of the neck of the uterus "rarely calls for special treatment;" and this topic is ably discussed under three heads:—1st. Are these lesions connected with the general break-down of the health, so constantly observed in the patients presenting them? 2ndly. Is their removal necessary for the recovery of health? And 3dly. Can they be removed without resorting to instrumental and surgical treatment?

Dr. Bennet then goes back, again takes up the question as to the existence of non-specific ulcerations of the cervix, and he adduces Dr. Tyler Smith's testimony in corroboration of their entity. It is worthy of remark, that Dr. Smith—according to Dr. Bennet—once, so late as 1850, supported many of the opinions of Dr. Lee relative to this subject; but it seems that he has lately published a work on Leucorrhœa, describing simple ulceration of the cervix, "in which," remarks Dr. Bennet, "the granular, bleeding, muco-pus-secreting surfaces, described" in a former publication of Dr. Smith's "as not constituting ulceration, as not deserving that appellation, are now carefully and minutely depicted as superficial ulcerations of the os and cervix uteri, and are distinctly stated to be the

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morbid change that immediately follows abrasions or excoriations of the mucous membrane."

Having alluded to the fact of the recognition of inflammatory ulceration of the os and cervix uteri in Edinburgh, Dublin, France, and America, Dr. Bennet then proceeds to examine the various doctrines that have, from time to time, been put forward as accounting for all those derangements of the uterus which, by Dr. Bennet, have been, and are, attributed to inflammation. Dr. Bennet mentions these theories under the following heads, thus:—The leucorrhœa theory, the syphilis theory, the ovarian theory, and the displacement theory.

According to the leucorrhœa theory, it is presumed that the lesions and granular conditions of the os and cervix uteri have originated from the irritation produced by depraved secretions; the secretions themselves having been altered, or rendered unhealthy, by "some change in the enervation or nutrition of the uterus." Dr. Tyler Smith is the upholder of this theory, and its merits are next examined by the author. After fully describing Dr. Smith's theory, Dr. Bennet says:—

> "Starting from these anatomical and physiological considerations, and extending his former idea, Dr. Tyler Smith assumes that a morbidly augmented secretion from the mucous glands of the cervical canal, occurring under the influence of general or local causes, is 'the most essential part of the disorder' in women presenting symptoms of uterine ailment, and is the cause of the mucous membrane lesions, and of their sequelæ, which are observed in practice. To this morbid condition, which he terms leucorrhœa, Dr. Tyler Smith attributes the morbid changes which I and others have described as the evidence and result of inflammation; that is, congestion, erosion, well-marked ulcerating hypertrophy, induration, the functional derangements of the uterus, and the secondary sympathetic reactions which are observed in the cases presenting them. The word inflammation is so sedulously avoided, that a careful perusal of Dr. Tyler Smith's work, leaves in the mind a doubt, as to whether he admits its existence even as a secondary result of this mysterious entity, leucorrhœa."

This "attempt made to unite past and present pathology, by Dr. Smith, does not appear calculated," in Dr. Bennet's opinion, to overturn what Dr. Smith designates "the inflammation theory," viz.: that professed by Dr. Bennet. The latter asks:—What are the congestions of the capillary villi, the erosions, ulcerations, and hypertrophies, but inflammatory lesions?

> "To say that they are symptoms of leucorrhœa is merely to evade the question; to answer by a word which, thus used, has no

rational meaning; and yet, if Dr. Smith admits that they are in their intimate essence inflammatory conditions, why does he not frankly say so? In every part of the economy, in every tissue, they are considered by pathologists to be the symptoms, conditions, and sequelæ of inflammation; and to ignore this fact is to ignore the established laws of general pathology. Indeed, it would be just as rational to call inflammation, ulceration, and thickening of the mucous membrane of the throat, 'leucorrhœa,' as to give that appellation to these identical changes in the cervical and vaginal mucous membrane."

Dr. Bennet holds that the leucorrhœa doctrine of Dr. Smith's case may be proved unsound by "the general laws of pathology," for hyper-secretions or fluxes from mucous or glandular organs do not produce any changes in the structures over which they flow, "*apart from inflammation;*" inflammation being essential, to endow them with irritating properties. Familiar examples are given, as in the occasional hyper-secretions of the nasal and intestinal mucous membrane; if the hyper-secretion be unattended with inflammatory actions, the parts which come in contact with the secretion never become irritated; whereas, if they are accompanied by inflammatory action, the contrary is the case. "Inflammation has supervened both as cause and effect." As such is "the pathological law" in other organs, "it must hold good in the uterus."

> "The morbid hyper-secretions of the cervical canal, and of the vagina, are in themselves innocuous, and only acquire irritating properties through the intervention of inflammation."

The term leucorrhœa, in Dr. Bennet's opinion, ought to be applied only to—

> "Those forms of passive mucous hyper-secretion of the vaginal, cervical, and intra-cervical mucous membrane which often temporarily exist independently of inflammatory lesions, and independently of uterine ailment. These passive conditions of hyper-secretion he looks upon as 'the reflex conditions of health,' which 'seldom come under the eye of the profession as distinct morbid states.'"

The next explanation offered for the occurrence of inflammatory uterine lesions is "the syphilitic theory," namely, that by far the greater number of these changes arise from secondary syphilis. This theory, it seems, had its origin in the French school of medicine, but we are informed that Dr. Tyler Smith considers "that far too little importance has hitherto been given to the connexion between secondary syphilis and obstinate leucorrhœa, with disease of the os and cervix uteri;" and that "there is a large amount of undetected syphilis in the works of Dr. Whitehead and Bennet." The latter, however, asserts that his opinions have not in any respect been modified by Dr. Smith's arguments, since the publication of the first edition of "Uterine Inflammation;" but, on the contrary, he feels convinced that Dr. Smith, and those who hold similar views, have very greatly exaggerated the influence of syphilis in the production of inflammatory lesions of the neck of the uterus. He says:—

> "This view of the subject appears to be the natural result of a transition state of opinion. First, inflammatory lesions of the uterine neck are ignored, or denied; second, it being no longer possible to deny their existence, they are considered to be *often* syphilitic; third, their inflammatory nature is recognised as the rule, and their syphilitic nature is thought to be an occasional, but rare, occurrence."

Now, Dr. Bennet is one well qualified to give an opinion relative to the frequency or the contrary of the syphilitic origin of these lesions; he was, for the period of two years, house surgeon to the Hôpital St. Louis, the great receptacle for cases of skin disease in Paris, and into which are admitted numerous cases of secondary syphilis. Here Dr. Bennet was given to understand that ulceration of the cervix uteri was very common, and generally considered to be of a syphilitic character.

During the entire time of Dr. Bennet's sojourn in the Hôpital St. Louis, he made it a rule to examine the state of the uterine organs, and he was at first rather inclined to believe in the syphilitic origin of the lesions there seen, as a general rule; but it happened that previous to his appointment at St. Louis, Dr. Bennet had studied uterine diseases at La Pitié, where are received a number of women who have been recently discharged from the Maternité, and who, as a general rule, are not affected with syphilis; and he "was struck by the similarity between the ulcerative states" he "saw amongst the syphilitic patients at St. Louis, and the ulcerative states" he "had seen amongst the non-syphilitic patients at La Pitié." It was this fact that first caused Dr. Bennet to doubt the secondary nature of these lesions, and led him to examine the question with great care. The results of Dr. Bennet's investigation were, first—that in the same individual affected with secondary syphilis these lesions had quite a different appearance from those seen in the throat. Second—That they did not, like secondary ulceration of the throat, yield to anti-syphilitic treatment. Third, that when the uterine lesion was left unattended to, and the anti-syphilitic treatment alone had recourse to, the syphilitic affection of the throat and skin disappeared, "but the uterine disease generally remained the same." The conclusion naturally arrived at by Dr. Bennet was, that syphilis was not the cause of the majority of those uterine lesions, but that, on the contrary, they were the result, for the most part, of simple inflammation, induced by the life which the patients had been in the habit of leading prior to their admission into hospital.

> "If," remarks Dr. Bennet, "chronic, inflammatory, and ulcerative conditions of the uterine neck are, generally speaking, non-syphilitic, even in those who are actually suffering from secondary syphilis, they are, *à fortiori*, still more likely to be non-syphilitic in women who are to all appearance free from any syphilitic taint; and such I believe to be the case."

The ovarian method of accounting for the presence of these lesions might, at first sight, be presumed to be a very favourable one. Dr. Bennet, however, tells us, that, "unfortunately, the ovarian theory does not bear the test of experience." If symptoms of ovaritis be, "through sympathetic reaction," the origin of the uterine disease, he argues, that by treating the ovaritis, and overcoming it, we ought to remove the lesions supposed to be depending upon its existence; but this happens, in the majority of instances, not to be the case; on the contrary, it turns out that, by directing attention to the uterine lesions only, and overcoming them, in the majority of instances we get rid of the ovarian disturbance, and so experience proves the fallacy of the ovarian theory.

The displacement theory next occupies the attention of the author, and is discussed in the fullest manner possible. He argues against this theory, both from the consideration of the anatomical and physiological facts bearing on displacement, and from pathology and therapeutics; proving, to us, in a most satisfactory manner, that displacement is, for the most part, the epi-phenomenon of inflammation. He concludes his volume with a general summary.

When we first opened Dr. Bennet's essay, it was with a certain degree of apprehension, well knowing that disputations between the members of the obstetric branch of the profession, in particular, are, as a general rule, remarkable for the illiberal spirit in which they are carried on; we had not proceeded far, however, in our perusal, ere all our apprehensions vanished. This essay is remarkable, not alone for excellent composition, admirable arrangement, and lucid reasoning, but likewise for the calm, candid, and gentlemanlike manner in which the author has dealt with his opponents. So far as we are concerned, we have no reason to gainsay any of the conclusions arrived at by Dr. Bennet, deeming them, as we do, those of common sense, and such as are, for the most part, sanctioned by our own school of medicine. On that account we refrained from making any running commentary in the course of our attempt to give an idea of the author's views, and his arguments in their support as opposed to those of other writers.

In conclusion we may observe, that one of Dr. Bennet's opponents would do well to take a lesson from him, with respect to the tone and temper of his writings, and, like Dr. Bennet, endeavour to exercise his judgment—in this matter, at least—impartially, in accordance with the enlightenment of the present day, instead of evincing "an anxiety to crush the modern views of uterine pathology."

On a true Parthenogenesis in Moths and Bees; a Contribution to the History of Reproduction in Animals. By CARL THEODOR ERNST VON SIEBOLD, Professor of Comparative Anatomy in the University of Munich. Translated by WM. DALLAS, F.L.S., &c., &c. London: Van Voorst. 1857. 8vo, pp. 110.

AMONG the many revelations of modern science, few have attracted more attention, or excited greater interest among naturalists, than the phenomena of Parthenogenesis; whether, with Owen, we regard this term as the appropriate designation of the alternation of dissimilar generations; or, with Siebold (and this, in our opinion, is the more correct), we restrict its application to the production of offspring "sine concubitu" from perfectly formed mothers. With regard to the former, Chamisso, as early as the year 1819, found in the Salpæ (a group of tunicated molluscs) that many species which are associated in long chains give birth to insulated individuals, which in their turn produce concatenated offspring; and these remarkable observations have been confirmed by all who have examined these and kindred forms; and from the researches of Sars, Steenstrup, Siebold, and others, we arrive at the conclusion, that, in many of the forms of lower existence, animals produce offspring, which at no one time of their development resemble their parents; but which, however, in their turn bring forth a progeny which revert in their form and nature to the parent animal, so that the maternal animal does not meet with its resemblance in its own brood, but in the descendants of the second, third, fourth, or even more remote degrees of generation; and this has been proved to be the case in many of the Medusæ, Claviform Polypes, Salpæ, many Entozoa and Aphides; and, according to the assertions of some naturalists, in all the lower classes of animals; so much so, that we cannot avoid inferring that many animals described as belonging to distinct species are but the alternate generation of known forms. The phenomena of alternation of generation differ essentially from metamorphic changes; in metamorphosis we have changes taking place in the same individual; while in alternation of generation, or metagenesis, different and many individuals arise and are separated from the parent; besides, in the course of metagenesis, in many instances metamorphosis also takes place. In metagenesis we observe that in one alternation are produced distinct ovaries and ova; in the others the development does not take place from ova, but by a process of gemmation; and in the isolated Salpæ, a remarkable organ (*Stolen proligerum*) has been described, whence are developed the catenated offsprings.

These facts have gone far to solve a difficulty felt by some opponents to the "development theory;" it has been stated by the ingenious author of the "Vestiges," that if animals have not been developed since the Creation, our first parents should have had deposited in their structure either all the human entozoa or their ova. The phenomena of metagenesis, however, may lead us to infer, that all human entozoa may be but alternate forms of those animals found in other creatures or elsewhere, and this is actually the case with one entozoon (*Cysticercus fasciolaris*) which in one form is found in the cat, in another in the rat or mouse. In true parthenogenesis phenomena of a totally different nature are exhibited—phenomena, the belief in the occurrence of which, did it rest on individual or questionable testimony, would gain but slight assent among the learned, but when we find such an array of names of naturalists who have mainly contributed to the advancement of natural science, all bearing testimony to the facts as related by Siebold, we cannot withhold our belief, that in many cases perfect offspring can arise "sine concubitu," from animals fitted for a union of the sexes, and that in one species of insects at least the sex of the offspring depends on the entrance of spermatic filaments into the egg.

In the study of this most interesting work, we are struck with the circumstance, that science is often retarded by general or sweeping assertions, although emanating from high authority. When Castellet, in 1795, reported to Réaumur, that he had found that a moth of *Bombyx mori* (silkworm) laid perfect eggs, though unimpregnated, he received the laconic reply—"ex nihilo nihil fit." How different in a similar case was John Hunter's reply—"But did they hatch?" for naturalists have long been familiar with the circumstance that unimpregnated females will sometimes lay eggs; but these have hitherto been supposed to have been invariably incapable of being developed into a perfect animal. A common example of this is the occurrence of pullets' eggs, but these are notoriously incapable of being developed by incubation. At first blush we might be led to infer that reproduction without fecundation was impossible, so contrary does it appear to the usual course of nature, both in the vegetable and the animal kingdom. We observe what careful precautions are taken that the spermatozoa should reach their proper nidus uninjured: how many provisions are found to hedge around the safety of the pollen! Exceptional cases, however, do occur in the vegetable kingdom. The Cælebogyne, for instance, a diœcious plant from Australia, has produced fertile seeds at Kew, although the female only is known to botanists; and M. Lecoq has deduced from some experiments of his own, that similar phenomena occur sometimes in hemp, spurge, &c. Our author seems to have been fully aware of the great caution required in carrying on an investigation of this kind, and to have devised his experiments accordingly.

In his introduction he describes the seminal receptacle found in female insects. The existence of such a receptacle in bees, explains how it is that a queen, fertilized by a single coitus, after discharging a number of eggs in the first year, may again, in the following year and still more subsequently, lay eggs capable of development, because the seminal filaments are preserved in this receptacle uninjured, and in a quantity sufficient for successive broods. Siebold reviews at length the cases of alleged true parthenogenesis or "Lucina sine concubitu," which are to be found recorded by many observers, and shows that errors may have occurred in the observation of these cases; one of the earliest on record is that of Albrecht, who in 1701 wrote a treatise—"De insectorum ovis sine prævia maris cum femella conjunctione nihilominus nonnunquam fœcundis." He took a brown pupa, which he preserved apart, and yet the moth evolved therefrom laid fertile eggs. He says:—"Cum masculum huic papilioni haud adfuisse certus essem, et propterea ejus ova subventanea et sterilia esse judicarem, vix amplius eorum habui rationem relictis interim iisdem oscitantius et sine omni cura sub dicto vitro per totum tempus hyemale." Dr. St. Blancard is stated, too, in 1696, to have had a spider which for four consecutive years laid eggs from which young spiders escaped, "although no male spider had ever appeared in the business." Dumeril, Bernoulli, Treviranus, Burmeister, and others, have made similar observations, but in all these instances the possibility of mistake has been shown by Siebold. This author then enters upon experiments which he performed on some sac-bearing Lepidoptera, particularly *Solenobia lichenella* and *triquetrella*, and by taking every precaution he convinced himself, and doubtless his readers also, that true parthenogenesis occurred in Psychides. Examples in the honey bee next came under his notice, and in these investigations he was greatly assisted by the distinguished apiarian, Dzierzon. From accurate observations of the habits of bees, as well as from careful dissections, Dzierzon arrived at the singular conclusion, that drone eggs require no fecundation, and that true parthenogenesis is normal in these insects.

In the "Bienenzeitung" of Eichstadt, 1845, he thus expresses himself:—"Presupposing what will be referred to and proved in the following numbers, that the queen (female bee), to become good for anything, must be fertilized by a drone (male bee), and that the copulation takes place in the air,—I express the conviction, from which all phenomena and mysteries may be perfectly explained, that the drone eggs do not require fecundation; but that the co-operation of the drones is absolutely necessary when worker bees are to be produced." Again—"In copulation the ovaries are not fecundated, but the seminal receptacle, that little vesicle or knot, which in the young queen is filled with a watery moisture, is saturated with semen, after which it is more clearly distinguishable by its white colour; the activity of the ovaries in the normal state commences only after copulation, but it is not necessarily caused thereby; hence many unfecundated queens lay no eggs at all, while others lay only drone eggs; and even workers do the latter, although, from their want of a seminal receptacle, I regard them as quite incapable of copulation. I am convinced that such eggs are sufficient for the production of drones, whilst the egg from which a queen or worker is to be developed must come in contact with the seminal receptacle." In another place he thus writes:—"The queen has it in her power to deposit an egg just as it comes from the ovary, and as the unfecundated mothers lay it; or, by the action of her seminal receptacle, to invest it with a higher degree, a higher potency of fertility, and awaken in it a more perfect being, namely, a queen or worker."

Baron v. Berlepsch, of Seebach, has also contributed much to establish this theory of Dzierzon's, and by liberally placing his hives, furnished with Dzierzon's movable comb-supports, at the service of Siebold, enabled the latter fully to confirm Dzierzon's views. Baron v. Berlepsch also performed three experimenta crucis: in the first he contrived the exclusion of a queen at the end of September, when there were no longer any males, and this queen, early in the ensuing year, furnished 1500 cells with a drone brood, the subsequent accurate dissections of Leuckart proving that this queen was a virgin. The second experiment exhibited considerable ingenuity. Knowing that a high or a low temperature causes the movements of spermatozoa to cease and become inert, he subjected a queen to a very low temperature in an ice-house; she recovered, and afterwards laid thousands of eggs, yet from all these were only males evolved. The third experiment was performed with the crossing of Italian and German bees. These, although of the same species, are found to differ most remarkably in appearance and disposition, and in the mixed breed which resulted, the drone offspring without exception presented the same variety as the queen-mother, thus affording a very strong negative proof that drone eggs do not require the interposition of the male bee. This matter has, however, been subjected to further proof by Leuckart and Siebold, for they examined freshly laid eggs, and in numerous instances they detected spermatic filaments in or on worker-eggs, while none could be found in drone-eggs. The experiments of Siebold upon this point seem to have been conducted with great nicety and care. He says:—

"I soon convinced myself that there was no possibility of discovering the delicate seminal filament between the granulo-vesicular yelk-masses, the linear object to be sought for was too subtle to be capable of discovery with certainty amongst the many mutually-crossing outlines of the yelk vesicles; after various vain endeavours to render the interior of the bee's egg accessible to the inquiring eye, I came at last to the idea of employing an artifice which I had soon acquired by practice, and which allowed me to survey at least a portion of the inner space of the bee's egg with great clearness and tranquillity. I crushed a bee's egg quite gently with a very thin glass plate, and so that it was ruptured at its lower pole, opposite to the micropylar apparatus, and the yelk gradually flowed out at this spot, by which a clear empty space was produced at the upper pole within the micropylar apparatus, between the egg-envelopes and the yelk which was retiring downwards."

Having thus microscopically examined the new-laid eggs of bees, he arrives at the following conclusion:—

> "Amongst the fifty female bee-eggs examined by me with the greatest care and conscientiousness, thirty furnished a positive result; that is to say, in thirty I could prove the existence of seminal filaments, in which movements could even be detected in three eggs; of the other twenty eggs twelve were unsuccessful in their preparation."

There was some difficulty in procuring drone-eggs for the purpose of examination, as the season was late; however, as Baron v. Berlepsch spared neither trouble nor his hives (of which he had 104 in his bee colony), twenty-seven drone eggs were procured, and of these the author states:—

> "I examined these twenty-seven drone-eggs, which might have been about twelve hours old, and which agreed perfectly both in their appearance and organization with the female eggs, with the same care and by the same method with which I had treated the female eggs, and *did not find one seminal filament in any single egg*, either externally or internally."

Three of these only were unsuccessfully prepared, and the same queen, both before and afterwards, laid eggs from which worker bees were developed.

In the latter part of his work Siebold enters on the consideration of the occurrence of true parthenogenesis in the silkworm moth, and details some very interesting observations on these insects. On a patient review of this subject, we can hardly withhold our assent from the propositions laid down by the author, and these views are considerably enforced by the strange facts detailed by other observers in regard to the prevalence and the absence of one or other sex among insects. Leon Dufour has stated, for example, that he never obtained a male insect of *Diplolepis gallæ tinctorum*, of the genus *Cynips*.

A priori we should say, that this was a topic from which we could expect nothing of practical utility or industrial application, and yet we are told that Dzierzon and others in their bee colonies have turned it to material advantage.

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An Introduction to Clinical Study; or, an Interpretation of Symptoms and Signs. A Manual adapted to the Use of the Hospital Student. By the late A. G. MALCOLM, M.D., &c. Belfast: Greer. 1856. 8vo, pp. 150.

THIS little posthumous work is the first part of a comprehensive design which the lamented author had in view for the purpose of simplifying the study of clinical medicine, and as a help, especially for students. At the time of his premature decease the present portion of the undertaking was well nigh through the press, and, as stated in the preface, "his friends thought it was due to his memory, and might not be altogether unacceptable to the profession, and the medical student for whom he had so long and unremittingly laboured, that the present volume, with its unavoidable defects and imperfections, should be given to the public."

While this volume cannot be said to add much to our knowledge in interpreting the "symptoms and signs" of disease, it certainly gives a very clear outline of those features which indicate certain morbid changes; and thus the student, especially, will be guided in forming a correct diagnosis, or, at least, will be assisted in making a true "interpretation" of the "symptoms and signs" which may be present; and the busy practitioner will find many useful hints in its pages, and will be led to mark several important matters in the examination of a patient which he might otherwise not observe: and who will deny that it is often of very great moment that no point should be overlooked.

In this brief notice it would not be possible to convey a very accurate idea of all that the volume before us contains, but we may state the heads under which the author has arranged this Introduction to Clinical Study:—First, he considers "the general appearance" which the patient presents, the points which likely strike the physician at his first visit, and the inferences which the practitioner will probably draw from the inspection. Among the most prominent symptoms in the general appearance to which the author refers are, the complexion of the patient; his expression of face; the manner and position; the tone of voice and speech; the eye; the respiration; the pulse; the tongue; the state of the blood, as it appears within its vessels, as withdrawn from the system, and as viewed through the microscope; the skin; the strength; the general feeling; and the sleep: to each of these individual points he devotes considerable attention, and directs attention to each one, which affords material guidance. Having thus discussed the various points to be observed in the "general appearance," he passes on to consider the interpretation of derangements of the nervous, respiratory, and circulating systems; derangements of the digestive processes and of the urinary functions; and then examines derangements of the female reproductive system, and of the skin. Thus, it will be seen that this little volume embraces a very wide field indeed in the study of clinical medicine. Under the several heads into which the subject has been divided, the author notices the various symptoms and signs which belong to each, and points out their practical value and importance, but, as the publication was designed more especially for the use of hospital students, he has not gone into those minutiæ which are found in the treatises and monographs which refer to these questions; still, as we have already said, both the student and practitioner will find much valuable information and many useful hints, in a condensed form, in this little book, which we recommend to the notice of our readers.

We shall now give an extract, for the purpose of showing the manner in which the author has treated his subject: and first, of cough, as a symptom:—

"Cough is, perhaps, of all the symptoms of derangement of the respiratory organs, the most common in pulmonary disease; at the same time we shall find that it may exist in the case of perfectly healthy lungs. Cough is a violent, rapid, expiratory effort, and may be voluntarily produced. It arises from irritation, either direct or indirect, of the sensory nerves of some part of the respiratory structures. The least irritation of the larynx or glottis instantly brings on a fit. The membrane of the trachea is less sensitive; while, in health, the deeper-seated parts of the tube seem but ill supplied with sensory nerves, yet, under disease, even these parts acquire an unusual degree of sensibility. Cough, then, may be excited by direct irritation of the sensory nerves of the mucous membrane in health, and, to a greater extent and degree, in disease. But it may have many other sources; thus: irritation of neighbouring parts, as the parenchyma (by deposits), the pleura, diaphragm, the stomach, the liver, and tumours pressing upon the lungs. These, however, are not by any means constantly so irritated as to induce cough; hence, absence of this symptom would not argue the absence of disease in any of these organs or parts, even the pulmonary parenchyma, or pleura.

"Cough varies in many ways. Thus, it may be various from differences in—1. The source of irritation; 2. The degree of sensibility in the part irritated; 3. The character of the cough itself; i. e. the degree and state of the muscular contractions; 4. The state of the bronchial membrane.

"Cough of a constant, *hacking* kind (almost without expectoration) may arise from elongated uvula; if produced only on attempting to swallow, from disease of the œsophagus or pharynx; if suddenly suffocative, and for a time in rapid succession, it is irritation of the larynx. If acutely *painful*, we must look to the pleura, or for a fractured rib, or other injury. If *convulsive*, it is usually a form of nervousness, or some sympathetic irritation. If it shakes the entire frame, is anticipated with great dread, shrieking, and rapidly successive, it is hooping-cough. *Dry* cough is usually nervous, or pleuritic, or noticed in the first stage of *pneumonia*, *phthisis*, and *bronchitis*, besides diseases of the neighbouring organs, as the stomach, liver, gall-bladder, and all cases of reflex pulmonary irritation, as from worms. The *humid* cough is a symptom in catarrh, and other forms of bronchitis, especially the winter cough of old persons, the softening of tubercles, and pneumonic suppurations. A *difficult* cough is one which is painful, and unrelieved by any expectoration. It is noticed in acute stages of *pneumonia*, *bronchitis*, and *phthisis.* A long-continued cough is either chronic, inflammatory, or tubercular. The cough is wheezing in *bronchitis*, and hooping in *pertussis*, *croup*, and *laryngitis*, and arises from narrowing of the pulmonary tube. It is barking, or hollow, in *chronic bronchitis* and *hysteria.* The paroxysmal cough is heard in cases of asthma, softening, and cavities, in tubercular disease; hooping-cough, in which the intermissions are nearly perfect; and in chronic bronchitis. A chronic hoarse cough denotes ulceration of the larynx; a croupy cough, congestion or plastic inflammation, when not nervous.

"Cough has various indications, according to age. Thus, in the infant, if short, caught, distinctly obstructed, it probably marks pneumonia; if constant, but free, bronchitis. In the child it is usually bronchitic, pleuritic, or sympathetic from abdominal irritation. In the adolescent female it may be bronchitic, hysteric, or from uterine irritation. In the adolescent male, phthisis should be looked for. In mid-age, pneumonia, pleurisy, and bronchitis, generally: and in females, the state of the digestive organs may be inquired after. In the old—if chronic—bronchitis, emphysema, asthma, and heart disease, are the most common causes.

"When cough is short, painful, and attended with livid lips and a brown congestion of the cheeks, look out for pneumonia. When hacking, frequently paroxysmal, frequently dry with flushing and perspiration, phthisis should be suspected. When there coexists frontal headach, aggravated by the cough, which is wheezing and constant, but increased by accumulation of phlegm, by atmospheric changes, and on retiring to or leaving the bed, some form of bronchitis is present. Cough, induced *only* in certain positions, is of some diagnostic value. This cough, brought on by turning on one side, is noticed in lesions of the pleura, or parenchyma of the inferior lung. Cough induced by keeping the head low is noticed in *hydrothorax*, pericarditis, and other diseases of the heart, and in *ascites.* Cough induced in suddenly rising up, or in any sudden movement, is observed in bronchitis and phthisis, and arises, in great measure, from the displacement of accumulated mucus. Cough that induces pain of the head is usually bronchitic; pain of the abdomen, peritonitic; pain of the side, pleuritic, pneumonic, hepatic, or splenic. Cough that completely intermits is either *pertussis*, hysteric, or reflex; seldom bronchitic, save in the very advanced stages."

The preceding extract gives a very fair idea of the manner in which the author has treated his subject throughout, showing the value he wished to be placed upon a symptom or symptoms in diagnosing any disease, and how any single symptom may denote several morbid conditions, and hence the necessity for a strict examination of all the signs and symptoms present, a careful analysis of the whole, and the due regard to be had in comparing and estimating the value of each. We trust we have now adduced enough to recommend this "Introduction to Clinical Study" to the favourable consideration both of students and of the practitioner. To the former it is peculiarly adapted, and should be duly appreciated by them, as the production of one who laboured long and earnestly for their advantage, and whose untiring industry, singleness of mind, and genuine philanthropy, have left a noble example, well worthy the imitation of all.

We cannot close this brief notice of the last work upon which this gifted physician was engaged, without expressing the deep sorrow we feel, in common with every one who had the honour of his friendship, for the great loss which the profession has sustained by his premature death. Few men of his standing have evinced such a persevering research in the wide field of medical science; and none have pursued such investigations from more disinterested and philanthropic motives. Of him it may be truly said that he loved his profession for itself, in the lasting opportunities which it afforded him for storing his mind with useful knowledge, and of benefiting his fellowmen. Like many other estimable members of the profession who have passed away ere their sun had attained the meridian, the morning of his life gave promise of a brilliant day; and that promise was in full progress towards being rapidly fulfilled, when, alas! the overtaxed frame succumbed, and he sank, a victim to that very disease to which he had devoted a large share of his research, and the characteristics of which he had rendered familiar to his pupils and many of his younger brethren. Had he been spared, he would not only have enriched the medical literature of our land, but he would have taken a leading position among the ablest practioners of the country: his fate has been otherwise; yet, while we deplore his early loss, we can, with feelings of satisfaction and friendly pride, point to his name as ranking among the host of noble men, who have been an honour to their profession and to the land of their birth.

Cranial Presentations and Cranial Positions; Suggestions, Practical and Critical. By R. W. WEST, M. D. Glasgow: Mackenzie. Reprinted from the Glasgow Medical Journal. Pamphlet, pp. 60.

THIS pamphlet has been reprinted from the Glasgow Medical Journal for October and January last, where probably many of our readers may have read it with as much interest as we did. It is an attempt to place our knowledge of the mechanism of cranial positions and presentations on a more distinct footing; to explain the different views held by writers on the subject; and to correct certain errors into which they have fallen. We shall not attempt to follow the author in his criticisms upon the views of others, but briefly lay before the reader his own. The first point in which he differs from other observers is in making the ear the landmark by which the position of the head is determined, in its relation to the pelvis; other writers take one or other fontanelle. He makes four positions: in the first, the right ear is near the symphysis pubis, the occipital end descending first in the axis of the brim, and finally coming round to the arch of the pubes by the left side, i. e. the ordinary first position of British authorities. In the second and most frequent position, the left ear is near the symphysis pubis, the occipital end of the head descending, and coming round to the arch of the pubes by the right side. The third position shows us the left ear near the symphysis pubis, the frontal end of the head descending in the axis of the brim, and finally coming round to the arch of the pubes by the right side. And in the fourth position the right ear is towards the symphysis pubis, the frontal end of the head descending, and finally coming round to the arch of the pubes by the right side. The relative frequency of these positions is based upon 481 cases, carefully observed by the author; of which 306 were in the first position, 151 in the second, 15 in the third, and 9 in the fourth.

From this it is clear that in the large majority of cases the occiput will emerge under the arch of the pubes; but it is quite as clear that in the minority of third and fourth positions the forehead will pass under the arch, and not, as has been described, change into the second and fourth. That there is reason for further observation we do not question, and perhaps the deservedly great authority of Naegelè may have commanded too implicit acquiescence in his statements. For those whose experience and observation qualify them for judges, Dr. West's investigations will have a peculiar interest.

The second part of the pamphlet consists of unclassified and abnormal positions, exhibiting the same acute criticism, and illustrated by cases carefully observed; and in an appendix we have extracts from the author's registry, showing the frequency of these positions, and the minute progress of the head in the different varieties. As illustrative of the author's theory we have four interesting plates. Without pronouncing any decided opinion upon the correctness of the views herein promulgated, we can nevertheless recommend the pamphlet to the careful consideration of our readers.

The Prostate Gland, and its Enlargement in Old Age. By DECIMUS HODGSON, M.D. Edin., M.R.C.S. Eng., Demonstrator of Anatomy to the University of Glasgow. London: Churchill. 1856. Royal 8vo, pp. 84.

To be successful in the composition of a prize essay necessarily carries a powerful prestige in favour of the author, as it must always imply a degree of information far above mediocrity. Besides, it must pass through an ordeal trying in the extreme, as it must be amenable to the criticism not only of the many, but likewise to the not always strictly generous cavillings of the unsuccessful few, who, as competitors, may have entered the lists to struggle for that palm of victory which a more fortunate rival may have succeeded in obtaining. Those literary defeats are invariably attended with that sense of intellectual inferiority which few indeed are willing to admit, and the mortification resulting from such a cause is most commonly accompanied by such feelings of bitterness as completely to overshadow all those generous sentiments which, under different circumstances, it would be our chiefest pride to manifest even to our most acknowledged opponent. Still, however, whilst labours of this description must be always attended with those social disadvantages which it would be difficult to dispute, yet they are, at the same time, endued with certain as obvious advantages, equally as impossible to be controverted. In the first place, they are eminently calculated to awaken and keep thoroughly alive that spirit of emulation without which the most laboured attempts at composition will always be marked by a certain degree of dulness and insipidity, but too apparent to the general reader,—deficient as, in such a case, they must necessarily be in that exciting tone of enthusiasm, which can breathe its own fire into the driest subject, and thus invest it with a sufficient interest to secure an attentive and continuous perusal. The ambition of the youthful aspirant for literary distinction here finds ample scope to expand itself, and labour, toil, and midnight vigil become to him but a secondary consideration, while supported and upheld by the glimpse of that distant reward which he confidently expects to obtain—valueless in the eyes of the many, but to him invaluable—the approbation and encouragement bestowed on his exertions by the few whose position and acquirements are such as to confer a weight and importance on the decision which emanates from their lips in favour of superior merit. Secondly, competitive compositions must always argue a certain perfection and completeness, rarely to be met with in productions of a different stamp. The apprehension of successful rivalry stimulates the mind like a watchful sentinel, and facts apparently trivial, which under ordinary circumstances might have been overlooked or carelessly slurred over, are now closely examined—their bearing on the point at issue accurately weighed and determined, and many which, at the first casual glance, might have appeared totally undeserving of more than a slight and passing comment will repeatedly eventuate in forming the nucleus of an ingenious theory or powerful argument in favour of some hypothesis conceived years before, but which was suffered to lapse into oblivion from want of this very confirmation in its support. Indeed, we consider it hardly possible to define distinctly the actual value of this species of writing as applied to the real advancement of the medical profession generally; and, slow as our public Boards have shown themselves in availing themselves of its employment as a practical test of efficiency, still, the very fact of its adoption even in a comparative degree by those bodies, so proverbially averse to every kind of change, so wedded to old and obsolete customs with such a pertinacious bigotry as to appear to have been placed in their several positions designedly for the purpose of acting merely as obstructives to every species of rational improvement, must always stand as one of the most incontrovertible proofs of its substantial and intrinsic excellence.

We have before us at the present moment one of those prize essays, written by Dr. Decimus Hodgson. The nature and ultimate design of the work may be at once clearly understood by the two paragraphs of its preface, which we quote:—

> "The following monograph is principally founded upon my Inaugural Dissertation, on graduation, to which a gold medal was awarded by the University of Edinburgh in the year 1855.
>
> "I have endeavoured to lay before the reader, in some detail, an account of the healthy anatomy of the prostate, and the morbid changes which it undergoes in old age."

On those grounds, dictated by himself, we will now proceed to examine how far the author has succeeded in achieving the purpose he has proposed—previously premising that the first few pages are occupied with a general description of the gland, followed by a very clear and intelligible explanation of the steps to be pursued in order to acquire a precise idea of the character and relative anatomy of this important organ. At page 10 we accordingly find its description thus given:—

> "The prostate occupies the middle line of the body in the front part of the pelvic cavity; it is placed behind the pubic arch, and half an inch, on the average, intervenes between the upper surface of the gland and the lower border of the pubic bones at their symphysis; the distance varies, however, somewhat according to the dimensions of the pelvis, the size of the gland, and the extent to which the bladder may be distended. In children and boys it is placed almost vertically in the pelvis, and gradually obtains its oblique position as life advances. The anterior true ligaments of the bladder, consisting of the strong anterior portion of the pelvic fascia, are attached to the lower margin of the pubic bones on their posterior aspect, and pass backward on the upper surface of the prostate to the neck of the bladder; they are separated from each other by a median interval or depression, which corresponds to the position of the dorsal vein of the penis, after it has passed into the pelvis, and is about to subdivide to form the prostatic plexus of veins; the ligaments cover in this plexus and send processes between the individual veins to join the capsule immediately surrounding the prostate; at the neck of the bladder the anterior true ligaments become united to the fibrous tissue of that part, and give origin to the middle longitudinal fibres of the muscular coat; or, as some have more correctly expressed it, the ligaments serve as a medium of insertion of those fibres to the pubic bones. The levatores prostatæ are a pair of muscles which arise on each side from an oblique line on the posterior aspect of the pubic bones, and proceed downwards to expand on the sides and lower surface of the gland in the manner of a sling. The deep layer of the triangular ligament of the pelvis is one of the divisions of the pelvic fascia; it is attached to the arch of the pubes above, and to the rami of these bones, and a

portion of the rami of the ischia latterly; below, it degenerates into a layer of cellular tissue which expands over the external surface of the levator ani muscle; this fascia, although connected with the bones above mentioned, is not intimately united with the periosteum covering them, as is the case with the anterior layer, but is continuous with the obturator division of the pelvic fascia; it is pierced immediately below the pubic arch by the dorsal vein of the penis; the prostate lies behind it, and receives from it, about an inch below the pubic arch, a prolongation which is continued backwards, and amalgamates with the capsule of the gland; this layer may be said to form the deep division of the prostatic capsule, above which the plexus of veins are placed; this prolongation of the fascia over the prostate, as the urethra leaves the gland, is an arrangement whereby the canal passes through a firm membrane, without the disadvantage of having a defined edge surrounding it at that part. The lower surface of the prostate lies on the anterior surface of the middle third of the rectum, its apex being found, on examination from the gut, to be an inch and a half or three-quarters from the anterior margin of the anus, and its base about two and a half inches from the same point; the apex of the gland is separated from the rectum by a slight cellular interval as the gut turns downwards and backwards to reach the anus. If the bladder be empty, or nearly so, the position of the gland and its relation to the rest of the urethra may be ascertained in the living body by passing a catheter into the bladder, and examining the parts by means of the forefinger in the rectum; the finger will detect in front the course of the instrument, covered, but not masked, by the bulb of the urethra; beyond that, the catheter may be felt somewhat more distinctly in the membranous portion of the urethra; and behind this the prostate will be discernible as a slightly prominent body, merging in front and behind into the neighbouring structures; if the bladder be full of urine, the prostate is masked by the distension."

We have extracted the entire of this article, as it furnishes a decisive proof of the author's capability of dealing with a part of the anatomy of the human body admittedly complex, and of a character so difficult as to render a description of it, so conveyed as to be intelligible to the general class of readers, by no means an easy task. No doubt, the petty caviller at minute faults might be enabled to discover a point or two on which to exercise the peculiar bent of his disposition, by marking with his decided reprehension a few trifling, isolated instances, not exactly in accordance with the received views on the subject; but the candid mind will be as equally prompt to acknowledge that the undoubted excellence of the whole is more than sufficient to atone for any trifling fault that may have incautiously crept into a mass of composition of the intricate nature of the one before us.

> "To obtain a correct idea of the urethra as it exists in the erect posture of the living body, the dissected pelvis ought to be supported by blocks in such a manner that the tips of the coccyx may be on a plane half an inch or so higher than the lower margin of the pubic arch, and the internal surface of the pubic bones look upwards as well as backwards, &c., &c."

The suggestion conveyed in these few lines is really excellent, for the method, as at present generally pursued, is certainly calculated to imbue the junior student with a very erroneous idea respecting the actual position of parts in their natural condition; and every one is fully sensible of the difficulty of eradicating from the mind a wrong impression received at this period, when once firmly implanted. When, however, it can nearly in all instances be at the moment obviated by the simple means here detailed, we conceive that the mode recommended should, where practicable, be always adopted and acted upon.

To those really anxious to acquire a proper idea of the prostatic portion of the urethra, we would strenuously advise a perusal of the author's article on this subject, as it is one so very plain and precise in all its details as to be easily comprehended by the most limited capacity. Precisely the same remark will apply to the anatomy of the prostate itself; and in this portion of the work we are happy to observe that he has called especial attention to a fact generally believed, but unquestionably void of any direct foundation to rest upon—we allude to the lobular arrangement of the gland, which it is usually said to possess; a condition certainly indistinctly defined in the numerous specimens that we have had very frequent opportunities of observing—the truth appearing to be, that they are so blended and fused with each other as to set at defiance any attempt at accurate division. He has, in our opinion, very clearly explained the grounds on which the error commenced, and why it has been hitherto propagated in almost every work on the subject, so as repeatedly to puzzle and confound the efforts of the junior student in his fruitless struggles to delineate satisfactorily the so-called lobes, which are pictured so precisely in the pages of the practical anatomist:—

> "The lobes of the prostate are usually described as three in number: two lateral and one middle lobe. Not that there is any particular lobulation to be observed in the general contour of the adult gland, but partly because in the fœtus and certain animals there are observed two distinct lateral lobes which in man are joined together in the middle line, and completed by the growth between their posterior extremities of the third lobe; and partly because

the enlarged gland presents, in many cases, a lobulated appearance on its urethral aspect, having the character of two lateral lobes, and a middle lobe intermediate between them at the neck of the bladder, &c."

His description and relative anatomy of the middle lobe is so very excellent that we are tempted to extract it:—

> "The third or middle lobe deserves, on many accounts, a particular consideration. It performs the part of the 'isthmus' in connecting the posterior extremities of the lateral lobes together, in the space contained between the neck of the bladder and the termination of the ejaculatory ducts. Above, it is bounded by the neck of the bladder and the contiguous portion of the urethra; below, and in front, it lies on the ejaculatory ducts and utricle; laterally and anteriorly it is inseparably connected to the lateral lobes, and their isthmus; and posteriorly it bulges out between the lateral lobes, in the form of a white rounded mass when it is of unusually large size. In persons under twenty years of age, with healthy prostates, the middle lobe is not usually found to protrude between the extremities of the lateral lobes."

Sir Everard Home unquestionably deserves the full credit of having first accurately described this portion of the prostate; and, no matter how many others may have cursorily alluded to it, to him only is due all the honour of having considered it with that degree of attention sufficient to invest it with that amount of pathological interest as to render it a subject of paramount importance to the practising surgeon.

At page 25 is given a description of the utricle or Weberian body, and we are induced to allude to it only because from the context it might be inferred that it was an organ always easy to be demonstrated in the substance of the prostate. Now, such an impression would be highly erroneous, and frequently produce disappointment; for, unless the gland to be experimented on be extremely recent and taken from a young subject, the cavity in question is most difficult to be detected, and will sometimes elude the closest research. That it may, under very extraordinary circumstances, entangle the point of a catheter, and thus be attended with very serious consequences to the patient, there can be no doubt; but we quite agree with Mr. Hodgson, that such an event is very improbable, more especially when we consider the extremely minute size of the orifice leading into the cavity, with its position and direction so completely opposed to the course which the beak of the instrument would naturally pursue, after passing the curvature invariably found to exist at the membranous portion of the urethra.

At pages 33 and 34 we are favoured with rather a copious account of the size of the prostate at the various periods of life from infancy to puberty—a subject not only curious in its details, but likewise possessed of some real practical interest to the surgeon, owing to certain operations in which it might be a matter of some moment to determine, at least approximatively, the bulk of this organ at a definite period of existence; but in the adult, or the individual more advanced in life, we can conceive nothing more utterly futile than the attempt to reduce to one common standard the size of the gland as existing in the great mass of mankind. The very diversity of opinion which prevails on this subject, and this amongst authorities of the highest class, coupled with the extreme liability to variation in development, as exhibited in different individuals in the other appendages of the generative system, ought to be quite sufficient to teach us the absolute impossibility of assigning any definite limit to the capacity of the organ as far as actual dimensions are concerned; and we can with perfect safety assert, that in the four last subjects that came beneath our notice, and that very recently, this remarkable difference in size was so strikingly obvious as to lead us immediately to the conclusions stated above.

At p. 35 Dr. Hodgson states:—

> "The prostatic secretion, as it is seen in the dead subject, is of an opaque, milky appearance, and more or less viscid in different specimens. It consists of a serous fluid, holding in suspension molecules, granular globules, and epithelial particles of the squamous and columnar varieties; indeed, its minute character presents nothing peculiar."

After quoting the view of Haller, "that the prostatic secretion is added to the seminal fluid merely to increase the expulsive force," the author thus continues:—

> "Nothing has since been added to our information on this point, excepting the observation made by Mr. Adams, that the fluid is uniformly acid after death; and the suggestion that this acidity may aid to preserve the fluidity of the alkaline semen."

We are glad that this opinion of the author so completely coincides with our own, in which we have never hesitated to express our conviction that we are totally ignorant of the functions and uses of this particular organ, the elucidation of which might profitably employ the time and attention of the physiologist, ultimately leading to some important result, perhaps rendering its mode of treatment, when in disease, more rational and less empirical than it is at present.

We must pass over the remainder of this chapter, as well as the succeeding one, which treats especially of the process of healthy micturition. Both of these will, however, amply repay the reader for their perusal; and near their termination he will find his attention drawn to the long discussed question respecting the mode in which the urine is normally retained in the healthy bladder, with the opinions entertained by Bell, Guthrie, and Handcock, on this confessedly intricate subject. We must, however, candidly admit, that we are inclined to give in our adhesion to the views propounded by Mr. Guthrie, as being, at least, more plain and intelligible in their nature than the subtile but certainly ingenious theories advocated by Mr. Handcock.

Having fairly disposed of the anatomy of the prostate, and considered its function and structure, as far as they are at present understood, Dr. Hodgson next proceeds to investigate that peculiar form of disease to which it is so especially liable at certain periods of life; alluding, of course, to that remarkable increase of development which, interfering with the offices of the urinary apparatus, must naturally terminate in an uninterrupted and intolerable course of suffering, sufficient to render the life of the wretched patient a positive burthen to him. One of those forms of disease, known by the name of parenchymatous hypertrophy, is thus described by the author:—

> "This affection is usually traceable to stricture or inflammation of the urethra of long standing, stone in the bladder, or some such source of irritation acting upon the neck of the bladder and prostatic urethra, and setting up chronic inflammation of the gland. The disease is not of such a nature as to enlarge the prostate to the same extent as is found in glandular hypertrophy; the prostatic urethra is not distorted or altered to any remarkable degree, although the bulk of the gland may be increased to twice its usual volume, or more.
>
> "On section, the substance of the prostate is found to be condensed and fibrous; the cut surface being dotted with numerous minute yellowish granulations, the glandular vesicles imbedded in the thickened interglandular tissue; each of these is attached by a sort of pedicle, consisting of its ducts and vessels."

This affection of the gland would appear, according to the investigations of Dr. Jones, to depend principally upon an hypertrophy of its muscular elements; but the author, with great candour, admits his inability to explain the causes that produce this effect. It is, however, fortunate that this form of disease is amenable to treatment,—the exhibition of iodine, and the application of the proper remedial measures to the primary affection, being always capable of insuring a permanent cure. The same remark will not, however, apply to the true glandular enlargement so frequently met with in old age; and, here displaying not the slightest hesitation in honestly avowing his own conviction respecting the extent of our present knowledge on this important subject, at p. 47 he says:—

> "Minute anatomy does not disclose anything peculiar in the character of those enlargements; the condition of the glandular structure appears to be even less altered, as seen under the microscrope, than it does to the naked eye. More extended observation may detect greater changes than we are at present acquainted with; for the present it is sufficient to state, that the most experienced pathologists have failed to discover anything whereby this structure of the hypertrophied tissue may be distinguished with certainty from the normal gland."

After an avowal so candid, it would be idle indeed, on our part, to institute a critical examination of this portion of the work, as it can only be regarded as a *resumé*—and an admirable one it undoubtedly is—of all that has hitherto been written on the subject; but still it is our firm belief that no one, however extended his information may be, could possibly rise from the perusal of those pages without having profited largely from the valuable hints interspersed throughout nearly every sentence; and whether we regard the train of symptoms so graphically described as accompanying this obstinate but truly formidable disease, or the treatment as recommended to be pursued in its several stages, all bear the impression of a master hand, familiar with his subject, and conversant with the art of imparting it in a graceful and pleasing manner. With respect to the illustrations at the termination of the volume, we would only observe, that they appear to be faithful transcripts of what they are intended to represent.

Clinical Lectures on certain Diseases of the Urinary Organs, and on Dropsies. By Robert Bentley Todd, M.D., F.R.S., Physician to King's College Hospital. London: Churchill, 1857. Fcap. 8vo, pp. 435.

Lectures on clinical medicine, when well conceived and ably and faithfully executed, have always obtained the favourable notice of the profession. Since the publication of that great storehouse of medical facts, the "Clinique Médicale" of Profes-

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sor Andral, we have had, in these countries, several works of a like form, worthy to take a place beside it, among which we may rank the Lectures of Watson, Latham, and our distinguished countryman, Graves. These productions, like standard legal reports, will always maintain a high degree of authority. They are pictures of diseases, accurate as photographs; and it is no small test of their fidelity to nature, that, when we take up one of these portraits, we find at once a likeness for it in some case or example which previously, perhaps, appeared to us anomalous, but now becomes easily understood. Such is always the triumph of genius in every art. The true painter draws from nature; he knows that to imitate is to succeed: the mere artist alters a feature here, or throws in a little more light or shade there, and thus produces a pretty picture, but one in which we see more of art than nature.

It is natural to expect that what had succeeded so well in the hands of those eminent physicians whom we have mentioned, and of others, should afford a subject for general competition; and, accordingly, our medical journals teem with illustrations of this mode of teaching. It seems to us a pleasant and useful mode of conveying instruction, and, as such, we freely endorse it; but we do not go quite so far as some of its favourers. For instance, among some valuable observations in the preface of the work now before us for review, we find the author deprecating long courses of lectures on the practice of medicine and surgery, and proposing to substitute for them publications on select subjects:—

> "How much better," he observes, "would it be to confine the lectures on these subjects to the discussion of difficult, doubtful, and important points of pathology and practice, preceded by a sufficient statement of first principles suitable for the uninitiated."

Now, with all deference to the high authority of Dr. Todd, it strikes us that this would be like setting a mathematical tyro to solve deductions from Euclid before teaching him the book. We confess that, without any disrespect to clinical teaching, but fully alive to its great value, we should be sorry to see it taking the place of its elder sister. Courses of medical lectures, when properly illustrated by drawings and pathological specimens, and not *too disputative*, form, in our opinion, an excellent groundwork for a beginner. They show the art in its general aspect; they supply the rules of which clinical cases are the examples; they prevent that narrowness of view which a partial study of individual examples tends to generate;

in fact, the clinical lecturer himself, before he can interpret correctly the details of a case, must borrow aid from the general lecturer's department; he must sketch the broader features of the malady before he can show the difference or agreement of the example before him. Would he, then, debar his class from sources of general instruction, while he himself comes before them charged with all the abstract information which he has been able to acquire from the collective experience of himself and others? Guarded in this way against error, he is able to caution his students against that mistake into which they would otherwise be likely to fall, viz., arguing from the particular to the universal.

The name of Dr. Todd has been so long and so honourably before the public, that any production from his pen cannot fail to receive attention. He has, doubtless, enjoyed many advantages which other men want. Succeeding to an hereditary name in medicine, nursed under Colles in an able school, associated with the first men of the day in his department, he has not depended for eminence on such accidental support, but on his own deep research, unwearied labour, and practical knowledge. Independent of his works on physiological subjects, he has been several times before the medical public, but never too often. His Croonian Lectures on Gout and Rheumatism, before the London College of Physicians, have successfully illustrated what appears to be the true pathology of these diseases; and in the present work, forming the second series of clinical lectures from his pen, the same subject is, among others, incidentally resumed. The Lectures now published are not intended to include the whole subject of urinary diseases and dropsies. They consist of sixteen lectures on these subjects, embracing various points of interest connected with them, and illustrated by select cases, each presenting some striking characters. In the first two lectures he discusses at some length the causes and treatment of hematuria; he proceeds in the next two to consider the various forms of disease of the kidneys, especially associated with albuminous urine and dropsy; and in the following lectures, up to the twelfth, he describes the typical forms of dropsy. The remaining chapters are taken up with the consideration of the gouty kidney, gouty inflammation of the bladder, and pus in the urine, &c., with valuable remarks on the phenomena and treatment of gouty disease. It is obvious that the subjects just mentioned afford many opportunities for the "discussion of difficult, doubtful, and important points of pathology and practice," and the author has made large use of them. We shall select from so much interesting matter a few points for our readers, which appear to us, from their more novel character, to possess interest; while at the same time we assure them that it is no small credit to Dr. Todd, that, even to subjects long known and apparently trite, he has been able to give an air of novelty.

In his remarks upon the dropsy which arises after scarlet fever, the author traces it to three conditions, which he considers necessary to coexist:—

> "These are—1st, a peculiar irritated state of the kidneys; 2nd, an analogous morbid state of the skin; and 3rd, a certain depravity of blood—by which I mean not only a deficiency in the amount of the red corpuscles of that fluid, as well as of the solids of the serum, but also the unnatural presence of certain poisonous matters, which interfere with its proper nutrient changes."

For the full development of dropsy he deems the concurrence of all these conditions necessary, and, if one of them be absent, dropsy may exist in a slight form, but not in its full results. With respect to the skin, he thinks that in cases where the morbid poison is not sufficiently eliminated, or its due elimination suddenly arrested, dropsy is apt to supervene; but that, when the morbid matter has been from the first enticed out to the surface, and the desquamation excessive, dropsy is much less probable. As to the kidneys, their anatomical condition is a plugging up of the uriniferous tubes with epithelium, and an augmented amount and irregular distribution of blood to these organs. The Malpighian capillaries become gorged, the serum escapes into the uriniferous tubes, some also of the red particles pass into the urine from the rupture of the capillaries; hence the urine is albuminous, and of a dark, murky colour, and loaded with fibrinous casts of the renal tubes. The change in the blood is one which seems to arise during the *progress* of the disease, and to be absent in the early stages; water ceases to be discharged from the system by its two great channels, the kidneys and skin, and, being stopped in this way of exit, it makes its way into the areolar tissue through the parietes of the bloodvessels. Why it enters this tissue more than others, the author attributes to the "determination of blood to that integument, caused by its state of irritation." Thus the blood becomes surcharged with water, its red particles are rapidly exhausted, and the albumen of the serum passes out by the kidneys. The nature of the disease exercises in all probability a control over the formation of the red corpuscles, something like what the rheumatic poison effects on the influence of lead. Further, this deteriorated condition of blood must react upon the rate and vigour of its capillary circulation. Such is the theory proposed by the author for the dropsy after scarlet fever; we present it without comment to our readers, as it is based on facts, and can only be overturned by similar means.

The treatment proposed by Dr. Todd for scarlatinal dropsy is modified by the views which we have just described. He regards the quality of the blood as deteriorated by the disease, and that bloodletting should be employed with great caution, lest a still greater depravation of that fluid may be produced. Hence he advises that our efforts should be directed to establish a new emunctory for the elimination of water by acting on the intestinal mucous membrane; when, after a fair trial of these means, and by acting on the skin and kidneys by the daily use of warm baths and the *gentler* kinds of diuretics, we find the kidneys still refusing to act properly, while the urine contains traces of red blood—in that case a little blood may be taken from the loins by leeching or cupping to relieve the local congestion:—

"Take but little at a time, and rather repeat the bloodletting in smaller quantities than take much at once."

Again—

"I do not recommend you to do this early, during the more irritative stage of the renal affection, as you will generally find bloodletting at that time much less efficacious in diminishing congestion than at a later period."

From much practical experience in this disease, we do not entertain so sombre a view of the dangerous effects of bloodletting as the author, and we think that we have seen some lives saved by its timely employment. The vast majority of these cases, however, get well by the simple measures well known in practice, and of the nature which the author has advised.

Dr. Todd has given, in the fourth and twelfth lectures, some interesting remarks on the "gouty kidney." He states that in persons of extreme gouty constitution, a contracted and shrivelled state of the kidney occurs, in which a large portion of the organ is wasted, and its structure condensed. Though usually found in inveterate gouty habits, it may occur also, but more rarely, in other states of the system. He describes at some length its anatomical characters. On inspection, the organ appears greatly reduced in size, the reduction in some cases amounting to one-half or one-third of its natural dimensions.

It is also shrivelled and lobated, and its capsule is thickened and loosely attached. On dividing it longitudinally, the cortical substance is seen remarkably wasted, so as to seem in thickness a mere rind.

Pseudo-hydatids or renal cysts are not unfrequently found, arising, as Dr. Johnson explained, most probably from dilatations of the uriniferous tubes. On examination with the microscope, some of the tubes are found empty, others collapsed and folded into fine plaits, giving them the appearance of fasciculi of fibrous tissue; other tubes again are largely dilated, and furnished scantily with epithelium, and a few epithelial cells contain fat. The circulation in the organ has become modified, the coats of the minute arteries are hypertrophied, and the vessels tortuous and full of oil in some cases, producing atrophy of the corresponding Malpighian body. Saline deposits are occasionally found in the tubes, consisting of lithate of soda. Such are the chief characteristics of the atrophied kidney, and as it is very frequently associated with gout, he gives it the name of the "gouty kidney." The rationale of its production is also explained by him. The blood, altered in its character by some morbid matter, as that of gout, not only furnishes to the kidneys an unhealthy support, but also its noxious ingredients are brought to these organs for elimination. The continued presence of such poisonous elements must react upon the kidneys, disturbing their functions, causing partial congestions, and insufficient nutrition, the result of which is a gradual decay of the organ. This state of kidney has been regarded as an advanced stage of Bright's disease, especially as the urine is slightly albuminous. This opinion Dr. Todd holds to be erroneous.

The author gives some valuable observations upon gout of the bladder, which he conceives to manifest itself in four different ways. One is in an inflammatory form:—

> "I apprehend that in these cases the mucous membrane of the bladder is red and inflamed, presenting, indeed, the ordinary appearance of a mucous membrane in a state of inflammation. It is a condition, however, which must be distinguished from inflammation of the bladder as excited by other causes, and unconnected with any specific poison."

He observes that pus is often secreted in this state, but that, when retained, an alkaline condition of the urine occurs, causing paralysis of the bladder. The *second* mode of attack leads to an opposite state, as regards the urine, from the former, viz.,

LIBRARY

that of *incontinence.* The chief symptom is a great frequency of voiding urine, due to a highly sensitive state of the mucous membrane of the bladder, so that it is intolerant of the presence of the smallest quantity, and the patient is constantly obliged to evacuate its contents at short intervals. A *third* class of cases is attended with sudden *retention* of urine, due, not to the condition of the mucous membrane, but to that of the muscular coat:—

> "Gout here attacks the muscular structure of the bladder, so as to paralyze it in a manner probably somewhat analogous to that in which the active principle of belladonna affects the circular muscular fibres of the iris, and allows the pupil to become dilated."

The paralyzing effect of gout upon muscular structures is often witnessed; thus we find it exerted upon the heart, troubling and causing intermission of the action of that organ; upon the stomach, producing that sinking state which almost realizes death; and upon the voluntary muscles as evidenced in lumbago and pleurodynia. The fourth mode of attack generally arises from the effects of gluttony or excess in drink, or from partaking of some indigestible substance. The patient is suddenly seized with violent pain in the bladder—

> "Which in some cases lasts an hour, but in others continues to torment the patient for a much longer time, preventing him from sleeping, and often producing great distress. This condition is usually relieved by free counter-irritation, the administration of alkalies, and the cautious use of opiates."

We shall conclude with a brief notice of some points in the treatment of gout which the author proposes. First, as to the local management, he prefers that course which long experience sanctions, viz., keeping the part warm by enveloping it in carded cotton covered with oiled silk, so as to produce a perspiring state of the part. Leeches are, in his opinion, not to be employed: they leave, he thinks, injurious effects after them:—

> "There is no doubt that, if you apply leeches to gouty joints, you will remove the pain pretty quickly, but you will leave a state of permanent weakness, from which the patient will be a long time in recovering."

He speaks in strong terms of the good effects of blisters over the affected joint, in relieving pain and removing effusions. He deprecates, however, a large blister: the size he suggests varies according to the size of the joint, "from that of a sixpence to that of a half-crown, or, at the very largest, a crown-piece." By the previous application of mustard, the effects of the blister are accelerated, and the quantity of serum increased. Blisters are not, according to him, contra-indicated even in a red appearance of the joint, provided that too large a surface should not be vesicated. With respect to the use of colchicum, Dr. Todd is one of those who look at this drug with suspicion, and he enters a protest against its indiscriminate use. When possible, he tries to cure his patient without it; and he coincides with the opinion that, if it cures the present attack, it is at the expense of a repetition of it after a short interval. Colchicum loses by time its effect in controlling pain, and patients are obliged to augment the dose until they become confirmed colchicum-drinkers, just as we find confirmed opium-eaters.

The author gives a remarkable picture of this baneful indulgence:—

> "I once attended a lady of high rank, who had gradually accustomed herself to doses of the wine of colchicum, which were measured, not by tens or twenties, but by hundreds of minims; and yet, such was the little influence of these large doses upon the essence of the disease, that her attacks became more and more frequent, her joints were horribly crippled, and her nervous system was fearfully shattered. I endeavoured to persuade her to leave off the colchicum, but without success; and she ultimately died in a state of extreme prostration, due mainly, as I believe, to the inveterate addiction to this drug."

With respect to the administration of lemon-juice as a medical agent, he states that he had been in the habit of using it as an useful diuretic in dropsies, long before Dr. Owen Rees introduced it into notice as an anti-rheumatic remedy. He disbelieves in any specific effect which it is said to possess in gout or rheumatism, but regards it as of service in augmenting the quantity of urine when the kidneys do not secrete sufficiently. The opinions of practitioners are so strangely discordant about this agent, that a trustworthy series of observations becomes desirable.

The few selections which we have just given from the work before us will afford our readers, we trust, an idea both of the valuable matter which these Lectures contain, and of the easy style and popular explanations of many points of even recondite pathology. We think that both student and practitioner could not desire a more thoroughly practical, and perfectly trustworthy guide for the study of urinary diseases.

And we cannot conclude our remarks without recording the great pleasure and profit which we have received from their perusal, hoping that their accomplished author will be long spared to pursue that career of untiring industry which has enabled him to give so many valuable works to our medical literature.

Researches in Pathological Anatomy and Clinical Surgery. By Joseph S. Gamgee, one of the Surgical Staff of the Royal Free Hospital, &c. London: Baillière. 1856. 8vo, pp. 216; with Illustrations.

It is almost impossible to review either with critical precision or analytical accuracy any series of brief and unconnected essays, as the greater the amount of practical facts they may embody, the more difficulty is incurred in the attempt, not only to do justice to the author, but also to convey a legitimate amount of instruction to the reader of a bibliographical notice: these two objects constituting the paramount duty of the analyst, which he should perform under all circumstances, whatever may be the construction of the volume submitted to his examination, or the character of its contents as original inquiry or special compilation. Hence arises a difficulty in adapting the mode of examination to the precise nature of the work and its tendencies, which has therefore originated two different modes of investigation, namely, "Review and Abstract,"—the former implying a re-examination of the opinions of an author, firstly, as to possibility; secondly, as to probability; and lastly, whether the statements adduced partake of the character of facts holding a legitimate relation as proofs to opinions propounded, either original in themselves, or having an undoubted tendency to subvert ideas previously received as correct on any given diseases. Here the reviewer analyzes, detects fallacy, unveils prejudice, and confounds baseless reasoning; or, on the other hand, strengthens the arguments of the author by the introduction of new facts, which may have eluded his attention, devoted to a special line of investigation, and throws into deeper relief the truths enunciated by the essayist. Such is his *judicial* capacity; neither exercised without serious reflection, nor expressed without due deliberation; and when he comes to assume his *judicial* character, he makes that judgment merely the natural sequence of the reasoning which he has previously adopted, and then allows the reader to accept or renounce his opinions and conclusions according to his own particular views. But in an *abstract* the salient points only of an essay are selected and placed before the reader, the facts being so self-evident as to render any exhibition of proofs superfluous; the premises being admitted and indisputable, note and comment become wholly unnecessary. This latter mode of examination particularly applies to the essays before us, as they are principally made up of the opinions of preceding authors, collected with a view to draw especial attention to particular lesions, and to create convenience in reference to obscure pathology and rare affections of the human body.

Ruptures of the parietes of the heart from the predisposing influence of dilatation, fatty degeneration and typhoid softening, are recognised in all the class-books treating of cardiac affections. But lacerations from the effects of external violence usually receive but an incidental notice; and in many works fail to be mentioned even in a cursory manner. To this subject the author seems to devote especial attention, not only by individual observation, but also by the display of a large amount of industry in the research after cases recorded by preceding authorities; and we would be doing him an injustice if we did not record our approbation of those generalizations deduced from the statistics of cardiac rupture, and state that these results were very different from the opinions we entertained prior to the perusal of Mr. Gamgee's essay on the subject. First, he has proved that all the cavities of the organ, without exception, as well as the cavæ, are subject to laceration more or less extensive. Twenty-eight cases are detailed, which he thus summarizes:—

"The *ages* of the 28 subjects were very various; thus 2 infants, 7 below 21 years, 4 between 21 and 30, 12 adults not precisely recorded, 3 at 53, 60, and 70 years respectively. These facts confirm the very natural supposition that, provided the external violence were sufficiently active, the heart of the mature man or of the decrepit adult would no more effectually resist it than that of the tender infant.

"*Sex*, as is well known, materially affects the proportion of surgical injuries, women being much less exposed to them than men; the rule is borne out in the present instance; for of the 28 cases, 20 were males, and 5 females; of the other 3 no mention is made about sex.

"*The causes* which produced the lesions under consideration may be thus classified. Falls from a height, or from a carriage in motion, 9. Passage of a wheel over chest or other forcible compression of it not accurately defined, 10. Kick from a horse, 4. Bullets fired against the chest from gun or pistol, 4. Blows of unknown kind, 1.

"*The duration of life* after the accident is not mentioned in 9 out of the 28 cases. In 11 of the remaining 20, death was instantaneous; of the other 8, one got up, ran a few steps, and fell dead; 1 lived half an hour; 2 lived two hours; 1 three hours; 2 four hours; and 1 fourteen hours. Of these cases, the first and last deserve special mention. Of the first (No. 3 of table), the heart is figured in Plate I. After receiving a kick on the chest from a horse, the man got up, put on his hat, walked several steps towards a stable, and fell dead. Upon examination, the pericardium was found uninjured, but the heart presented three ruptures. It is worthy of notice, that the integument presented no sign of the blow, though the sternum was broken across the middle.

"It was an infant who survived the marvellous period of fourteen hours with a rupture nine lines in length at the posterior surface of the right auricle. It had been occasioned by the passage of a cart-wheel over the chest, whereby also several ribs were broken, though no mark of contusion was impressed on the surface of the body. The circumstantial manner in which this extraordinary case (27 in the table) is related in Rust's *Magazin für die Gesammte Heilkunde* (vol. 16, p. 92), leaves no doubt whatever as to its authenticity. The wonder it excites is somewhat lessened by the reflection, that possibly the rupture was limited at first, and only acquired the mentioned extent, as the heart's fibres separated during its action.

"*Co-existing lesions.* No mention is made of the condition of other parts of the body in five of the 28 cases. In two, the recorder alludes generally to other injuries, but does not specially mention any; in the remaining twenty-one cases the co-existing lesions admit of the following classification:—1st. ABDOMEN. Its condition is not alluded to in ten. In five, it is expressly said to be healthy. In three, the liver, and in other three the spleen, was the seat of laceration. 2ndly. HEAD. In thirteen out of the twenty-one cases its condition is not alluded to; in four, it is said to have been healthy. In one, there was a slight bruise over the occipital protuberance. In one, depressed and comminuted fracture of the frontal bone and laceration of the cerebral lobes. In one, general contusion of the brain and fracture of the middle fossa at the base of the skull. In one, the scalp was torn and the parietal fractured. 3dly. PARIETES OF THE THORAX. In one of the twenty-one cases now under consideration, the condition of the chest-wall is not mentioned, but it may fairly be presumed to have been healthy, as Bérard was the recorder. The man fell from a scaffold, and there were lesions of the cranium and abdomen, besides the heart rupture. In six cases it is particularly mentioned that there was no bruise of the chest-wall. In three, that the bruise was but slight. In one, there was sensible depression of the chest-wall. There were fractures of the ribs or sternum, or of both, in eleven out of the twenty-one cases. In two of the eleven cases it is particularly mentioned that there was no displacement of the fragments; in a great majority of the others, the extent of the rupture, the nature of the cause, or the integrity of the pericardium, exclude all possibility of the heart rupture having been occasioned by penetration of one of the bony fragments."

As to the precise seat of the cardiac lesion, the following are the facts:—It affected the right ventricle alone eight times; the left ventricle alone three times; the right auricle alone once; right auricle and other parts, three times; left auricle, three times; left auricle and other parts, four times. Thus the cases tabulated would represent the ruptures in the following order of occurrence: Auricles, right, four; left, seven;—ventricles, right, eight; left, three: making the numbers ten on the left, to twelve on the right; and also showing the ratio as to the ventricles to be as eight on the right to three on the left. We shall extract the concluding summary in the author's own language:—

"*a.* Ruptures of the heart by external violence, independently of penetrating wound, are notably more frequent than is generally supposed.

"*b.* They occur irrespectively of age and sex, provided the requisite cause come into operation; but of the cases recorded, the majority are in adult males; in accordance with the known fact, that they are most frequently the subjects of injuries from being much more exposed to them.

"*c.* The common causes are falls from heights, and the application of severe violence to the chest.

"*d.* Death is usually sudden. Cases are on record, however, in which persons have been capable of momentary but severe exertion after the accident, such as rising from the ground and running. The survival of fourteen hours renders Rust's case unique.

"*e.* The most frequent co-existing lesions are ruptures of the liver and spleen, injuries to the head, and fractures of the bony chest-wall, but without penetration of the fragments. In 9 of the 28 cases analyzed, there was either no bruise of the thoracic parietes, or a very slight one.

"*f.* The pericardium is intact in at least one half of the cases. The observations relating to the condition of the heart's texture are few; but they demonstrate that even perfectly healthy hearts are liable to the accident under consideration. Analysis of 22 cases, with a view to determine precise seat of lesion, gives the following result:—12 ruptures of the right to 10 of the left side; but the disproportion between them is much greater, 8 to 3, when ventricles alone are considered. It is curious that the left auricle is more frequently the seat of rupture than the right, in proportion of 7 to 4.

"*g.* In the few cases which have survived, the symptoms have been those of severe shock. No other therapeutic indications occur than husbanding the vital powers by keeping the body warm, and in a horizontal position of perfect quiet.

"*h.* The mechanism of these ruptures is twofold:—1stly, by jerk of the blood contained in the heart; 2ndly, by direct compression, which may extend from a mere bruise on the front wall of the heart, to its complete disorganization. In both these modes of operation it is very probable that the extent and kind, if not the origin, of the rupture, are sometimes regulated by contraction of the heart's fibres."

The second essay treats of senile gangrene, and records the particulars of two cases, one presenting the evidences of arteritis, the second, calcification of the arterial coats, both being followed by a form of dry gangrene. Having drawn attention to the opinions of Brodie, Carswell, and the celebrated Dupuytren, as to the pathology of this affection, he states the post-mortem appearances which lead him to look for disease in various morbid changes, rather than as the result of any single lesion, and in this we follow the author, recognising:—1. Alterations in the blood (typhoid) ; 2. Alterations in the arterial trunks; 3. In the capillaries; 4. In the heart; and 5. Local neurasthenia as being variously the prevailing cause inducing passive gangrene; and it is only by taking this enlarged view of its causation, that we can account for the defective nutrition which constitutes the essential element of the disease appearing under such a variety of distinct physiological phases. As to treatment, nothing is added to our previous knowledge, but we can assure Mr. Gamgee, that in the Irish school we are led to deal with each case as a separate study, as we rarely admit the power of specifics, even when supported by the eminent authorities he has named in this well-written essay.

In some judicious remarks on the complication of malignant disease with cystic formations, the author advocates the opinion of their combination, and further conceives, that when secondary cancer supervenes on the removal of the so-called cystic sarcoma, that the former was present in the original tumour, and is never produced by the conversion of a benign into a malignant deposit; in these views we fully concur, and we shall continue to maintain them until the microscope succeeds in revealing characters of cancer elements more positive than have as yet been ascertained by that useful adjuvant to pathological study. In connexion with this subject, he speaks of

Professor Landolfi's caustic, chloride of bromine, which has received notice from us in a former Number, and notwithstanding the evidence which is daily and almost hourly accumulating in favour of caustics for the eradication of cancer, we still prefer the knife, both on account of its expedition and safety, as also because we cannot believe in the specific curative agency of any escharotic at present discovered, or likely to be added to the Materia Medica.

We avoid the remarks on syphilisation, as these are more social than surgical in their tendencies, in order to examine an essay embodying some judicious observations on lithotomy and lithotrity, in which we fully concur; but at the same time we cannot see the novelty in the Neapolitan mode of performing the lateral operation described as follows by Mr. Gamgee:—

> "An ordinary grooved staff having been passed, and the patient tied up, the operator grasps the handle of the instrument in the left hand, and inclines it to the right side, at the same time pressing down in the perineum. By this manœuvre, the curve of the staff is readily felt beneath the integument, which is moreover made tense by it; and, in the majority of instances, the prostate gland can be felt in front of the anus, and even its interior edge defined, so as to furnish a very valuable guide. The operator now makes the ordinary external incision of the lateral operation, and divides the tissues down to the staff, which is constantly pressed towards the wound; in its upper angle, and a very little below the surface, the right index finger detects the anterior edge of the prostate; the point of the knife pierces the membranous urethra a little in front of that edge, and now the operator's two hands must co-operate; with the left one, the handle of the staff is carried upwards, towards the middle line, and backwards; thus the concavity of the staff becomes distant from the rectum as it approaches the pubis, and the point is pushed further on into the bladder. Simultaneously, the point of the knife having been from the first kept in contact with the staff, the right hand is raised and pushed forward, so that the back of the knife slides along the groove, and its point enters the bladder; the blade being narrow, it only notches the anterior edge of the prostate and its urethral surface in the passage onwards. It is not until the point has entered the bladder that the prostatic incision is completed; and this is done by fixing the back of the knife against the staff, and directing its point downwards and to the left, in the direction of the inferior oblique axis of the prostate, the one commonly divided; the knife is now withdrawn without cutting, in the same direction in which it was introduced. The maxim is, to make the prostatic incision as small as is consistent with the safe extraction of the calculus. It is enjoined that the fibrous ring at the base of the prostate should be preserved intact.

"The introduction of the forceps and removal of the stone complete the operation."

All these steps are taught by every surgical anatomist in Dublin; and the use of triangular knives, laterally grooved staffs, gorgets, cutting, plant, or grooved, have long been exploded in this country, except when they are occasionally displayed at lecture as the natural curiosities of the past generation.

Fractures of the extremities have been made the subject of critical inquiry so extensively, that we had almost esteemed this particular department of surgery exhausted of all novelty tending to useful practical results; but the author having critically examined the treatment of Pott, Sharpe, Liston, Mayor, and others, makes a judicious series of reflections on the physiological laws to be observed in their arrangement, evidently leaning towards the suspension plan of Mayor, called "hyponartheses," to which he attributes many advantages that seem, we are bound to admit, just and well deserved; and from the experience of its application in the Dublin hospitals, its merits are far from being exaggerated; yet, it will ever occur, that surgeons, following the light of their own individual opinions, will continue to treat fractures, not after any particular mode, but subject to the precise exigencies of the case before them, which is open to the influence of as many local and general peculiarities as any other affections in surgical practice.

In conclusion, we would draw the attention of surgeons to the subject of calcareous disease of the testicle and its appendages, which, ably treated by the author, opens a fertile source of inquiry to the pathologist as a senile disease; and we trust that Mr. Gamgee will continue those essays which have afforded us not less information than material for future reflection.

On the Diseases of Women; including those of Pregnancy and Childbed. By FLEETWOOD CHURCHILL, M. D. T. C. D., M. R. I. A., Professor of Midwifery to the King and Queen's College of Physicians, Ireland, &c. Fourth Edition. Dublin: Fannin and Co. 1857. Fcap. 8vo, pp. 827.

WE have already reviewed this work on three different occasions, and each time in terms of the strongest commendation. The fact of a *fourth* edition being called for is the best proof of its high reputation and intrinsic worth: nevertheless, we would not be doing our duty were we to dismiss it without further notice.

On examination of its contents, we find a great many improvements in this new edition. The actual quantity of matter is increased by *sixty* pages; the index is more copious; and there are introduced eighteen good illustrations of disease: some of them, the author tells us, "were taken from original drawings, others from the published works of Huguier, Clarke, Boivin, and Dugès, &c.; none from Dr. Ramsbotham;"—a statement sufficiently plain and definite, but in our opinion objectionable, inasmuch as it leads one to suppose that Dr. Ramsbotham is a contributor to the iconography of female diseases,—which we believe is not the case; and moreover shows that a most unfounded accusation of not literary, but pictorial piracy, made by Dr. Ramsbotham against the author, has been sufficient to cause Dr. Churchill to exhibit here a little angry feeling, when he should only have despised an unworthy calumniator.

Whilst adhering to the same division of his subject pursued in former editions, the author has in the present one given some new chapters, which render the work more complete. The first of these is upon *urethritis*, a disease described by Ashwell, and of which not much is known beyond its very intractable nature. Chapters on *occlusion of the vagina*, and *occlusion of the os uteri*, are also added, and will be found to contain an epitome of all the knowledge we possess on these important subjects. The chapter on *ovarian irritation*—also a new one—is a reprint of an excellent monograph which appeared in the pages of this Journal some years ago. Under the head of Diseases of Childbed, three new subjects are introduced, viz.: *tetanus*, *paralysis*, and *arterial obstruction in puerperal women*. Here again the author displays his usual industry, and on each of these subjects he gives, in a clear and well-arranged manner, the results of extensive researches; so that, within the compass of a few pages, we have brought before us nearly all the information relating to the particular disease under consideration, scattered over the wide field of obstetric literature.

In the other parts of the book Dr. Churchill has endeavoured, and successfully so, to keep up with the present advanced state of our knowledge. At the same time, he altogether abstains from entering into any of the controversies which have raged on the other side of the Channel, touching certain uterine diseases and displacements, and their modes of treatment. In adopting this course we believe he has not been influenced by any consideration of mere convenience or policy, but has acted simply in accordance with his principles and honest convictions, as every man ought to do who has at heart the advance-

LIBRARY

ment of scientific truth. Upon those varied controverted points which have engaged so much attention, the author's views are moderate, and are conveyed in temperate language.

Respecting the employment of the speculum, we should have been glad if Dr. Churchill had expressed himself more boldly and decidedly against the too prevalent abuse of this instrument. From the frightful extent to which this is at present carried, by a certain class of practitioners in London and elsewhere, there is much reason to fear (as we have before stated) a reaction against the speculum, so violent as may deprive us of a valuable aid to diagnosis and treatment, and bring down heavy public censure upon our common profession. For, this indiscriminate use of the speculum is not merely a great *medical* error,—too often the cloak for fraud and imposition,—but it is far more than this, *it is a great moral evil*, and one that should be denounced by every man who has at heart the best interests of his profession. Sooner or later the public will find out this abuse, and then its correction will speedily follow, *but not before the status of the entire medical body is lowered, and its hold over public confidence seriously shaken.*

We cannot take leave of this, the last publication of the medical press of Dublin, without expressing our regret that the author should still adhere to the barbarism of printing his prescriptions in *contracted* Latin. The titles of many journals and foreign books, referred to in the notes, are also almost invariably *contracted*, so that, in some places, it is difficult to understand from what, or whom, the quotation or authority is taken. We have detected, moreover, numerous typographical errors; and whenever the French language is used, the vowels are very rarely accented. We regret to have to make these, perhaps, hyper-critical remarks on a book otherwise so perfect, whether we regard the style of the author, the completeness of his treatise, or the getting up of the volume.

On the Pathology, Symptoms, and Treatment of Ulcer of the Stomach; with an Appendix of Cases. By WILLIAM BRINTON, M. D., F. R. C. P., Physician to the Royal Free Hospital, &c., &c. London: Churchill. 1857. 8vo, p. 227.

"DISEASES of the Stomach," it has been remarked by Abercrombie, "have, from various causes, presented a wide field for speculation, conjecture, and empiricism; a vague and indefinite phraseology has often been allowed to take the place of principles; and the whole subject is removed, in some measure, out of the usual limits of pathological inquiry. Amid this uncertainty we must endeavour to discern what is truth; and should this prove to be more limited than a slight view of the subject might lead us to expect, something will, at least, be done by ascertaining its extent, and tracing the course by which it may be enlarged."

It is because the work of Dr. Brinton is an attempt to ascertain what is truth, its extent, and the course by which it may be enlarged, that it merits a somewhat extended notice in our pages, not from its adding much to the store of knowledge we already possess on the subject of which it treats, but rather from its arranging and collecting, as it were, into a focus, the principal materials that had previously been ascertained, thus doing away with much vague and indefinite phraseology, and removing one form, at least, of disease of the stomach, from the wide field for speculation, conjecture, and empiricism, lamented by Abercrombie.

The work is divided into four parts. The first treats of the "pathology" of the gastric ulcer, but it would be more correctly described as treating of the morbid anatomy of the disease, for though much information has been collected as to the anatomy of the ulcer, the value of which as a guide to pathological inductions can scarcely be over-estimated, yet the true pathology of the disease, or the nature of the morbid actions from which these appearances may have resulted, is scarcely touched upon. This is to be regretted; for, let us declaim about theory as we may, it is only by the reduction of our facts to theory that they acquire importance; and to every man it is an assistance in this process, to have the conclusions arrived at by others laid before him. In noticing this section of the work, therefore, some of the more important pathological inductions arrived at by other authors will be brought forward, that they may be measured by the facts collected by Dr. Brinton.

The second part treats in detail of the symptoms observed during life, and the means of diagnosis. It also contains a section on the "ætiology" of the disease, which, if it had been more extended and placed in conjunction with the facts collected in the first part, might have supplied the want there so evident: that it is not so placed, is due probably to the work being, as stated in the introduction, in a great measure a reprint of papers that had previously appeared in various journals.

The subject of treatment is considered in the third part; and in the appendix, cases illustrative of the principles laid down are given.

Dr. Brinton begins what he hopes may form a series of essays on the diseases of the stomach, with an inquiry into the pathology, symptoms, and treatment of ulcer of this organ, because, he says:—

> "It would not be very difficult to establish a title to precedence on the part of this disease over the other affections of the organ. For of what other gastric malady can we allege that it occurs very frequently; that it may generally be detected in the living subject; that it runs a protracted course, at any stage of which it may be suddenly fatal; that it is usually curable; and finally, that it is the result of a specific structural lesion, such as can at once be detected in the examination of the dead body? And if the statements implied in this question be but partially true, how can we justify ourselves in diagnosing cancer or dyspepsia, except by a process of inductive reasoning, which generally amounts to, and often specifically includes, a reviewal of the usual phenomena of this disease prior to its rejection, as the true explanation of the symptoms before us?"

We shall now proceed to an analysis of the several parts of the work, and lay before our readers the more important facts that have been ascertained, but referring to the work itself for the details which have been gleaned from "the numerous necropsies of this lesion that the author's own practice has afforded, and about 1100 more, the majority of which have never before been collected, much less compared with each other," that he has obtained from various journals and reports, British and foreign, and hospital museums.

PART I., PATHOLOGY.—The frequency of ulcer of the stomach may be best inferred from the number of times this lesion has been observed in a given number of persons, dying from all diseases, and subjected to careful necropsy. Much valuable evidence of this kind is adduced, which goes far towards justifying the following propositions arrived at by Dr. Brinton:—

> "1st. That the ulcer of the stomach is so far from being a rare lesion, that evidence of its present or previous existence may be found in from two to thirteen per cent. of persons dying from all causes; and that the ulcer itself, open and unhealed, may be observed in from one to ten per cent. 2nd. The 7226 necropsies thus collected offer us about 360 ulcers, which are pretty equally divided into 190 open ulcers, and about 170 scars. These numbers tolerably correspond to a total proportion of five per cent, which is divisible into $2\frac{3}{5}$ and $2\frac{2}{5}$ for these conditions respectively. 3rd. The above range of frequency is so remarkable as to suggest some special cause or causes. These, however, could only be determined by a special analysis of the class, age, and sex of the patients received into these hospitals in which these observations were made. Failing

such an analysis, I will only point out that the maximum frequency of the ulcer (stated by Dahlerup) occurs in the spirit-drinking population of Copenhagen; and that its larger proportion in the German Krankerrhaeuser may be plausibly referred to the inmates of these institutions being, on an average, of greater age, if not of more destitute circumstances, than the persons usually received into English hospitals."

The statistics derived from British hospitals show the lowest per-centage of cases; being, of open ulcers, about 1 per cent., and for ulcers open and cicatrised, from 2 to 3½ per cent. Observations made on the living subject accord with these statements, the out-patient practice of the hospital Dr. Brinton is attached to affording, from an annual attendance of 4000 patients, about 40 instances of this malady, or 1 per cent.

Sex.—That the female sex is more liable to this disease than males has long been known. The degree in which they are so appears, however, to have been much exaggerated, as, in 654 cases in which the sex is mentioned, the proportion is 440 females and 214 males, numbers which nearly correspond with 2 to 1.

Age.—With reference to the age most liable to the disease, the conclusions arrived at by Dr. Brinton are still more widely at variance with the generally received opinion, that it is during the first years of puberty that this disease is most likely to occur. The facts collected lead him to infer—

> "That the liability gradually rises from what is almost a *zero* at the age of ten, to a high rate, which it maintains through the period of middle life; at the end of which period it again ascends, to reach its maximum at the extreme age of ninety. We may therefore conclude that the ulcer of the stomach is specially, though not exclusively, a disease of middle and advancing life"[a].

Situation.—Of 220 cases, in 86 the ulcer occupied the posterior surface of the stomach; in 55 its lesser curvature; in 32 its pyloric extremity; in 13 its anterior and posterior surfaces, often at two opposite places; in 10 its anterior surface only; in 5 its greater curvature; and in 4 its cardiac pouch:—

> "These numbers claim a marked preponderance of liability for the posterior surface, the lesser curvature, and the pyloric pouch, over the anterior surface, the greater curvature, and the cardiac sac respectively; the ulcers in the three first situations together making up 187, or nearly 85½ per cent. of the whole."

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[a] "The disease occurs chiefly at the period of puberty, and very often, particularly in the female sex, as early as the fifteenth year."—*Rokitansky.*

The facts here presented possess very great importance in several points of view. In the second part of the work they are referred to in connexion with a method of diagnosis first proposed by Dr. Osborne in a series of papers published in this Journal, entitled, "Propositions relating to Diseases of the Stomach," which is founded on the effect of posture on the pain, whereby not only important evidence of the existence of an ulcer is afforded, by the increase of the pain caused by lying, so as to favour the gravitation of the contents of the stomach to particular parts of its walls, but often also its exact position indicated.

In other points of view the situation of the ulcer is also of importance. Dr. Osborne refers to it as one of his reasons for attributing the disease to long-continued irritation of the tubular glands that secrete the gastric juice, which are most numerous and best developed in the situations where the ulcer is most frequently found.

In a medico-legal relation, also, the situation of the ulcer is of importance, as observed by Dr. Williamson, in his papers on the "characteristic marks by which to judge of the cause of perforations of the stomach," published in the nineteenth volume of the first series of this Journal, where it is shown that perforations from the action of the gastric juice after death, and from the effects of corrosive poisons, are principally found at the cardiac extremity.

The next point we have to notice is as to the number of ulcers found in the same stomach. Cruveilhier states that there is rarely more than one, and Christison, in his work on Poisons, adopts this statement as distinguishing such cases from the effects of corrosive poisons, where, he says, the number of ulcers generally exceeds one or two. Dr. Brinton, however, has collected 536 cases which specify such details:—

> "Of these, a plurality of ulcers was present in 113, a number which corresponds to rather more than 1 in every 5 cases, or about 21 per cent. Of these 113, 97 (corresponding to 463 instances of ulcer) offered the following numbers: in 57 there were two ulcers; in 16 three; and of the remaining 24, in which 'several' ulcers were present, 3 cases offered four, and 2 cases five ulcers each; while in 4 there are reasons to suppose even this number was exceeded."

The *margin*, *base*, and *depth* of the ulcers are next considered; and here, especially, we think Dr. Brinton might have added to the interest and usefulness of the facts he has so carefully collected, by entering into the consideration of the doctrines they inculcate. In noticing some of the preceding sections, a few of their more important bearings have been indicated, and here, though briefly, the same course shall be pursued. To any one treating ulcers in the stomach, such as are here described, one of the first and most important questions arising would be as to the mode of their production. On consulting some of our leading authors, a great and direct variance would be met with on this subject, and the mode of treatment recommended would be found to vary in a nearly equal measure. Thus, in the Cyclopædia of Practical Medicine, Dr. Houghton asserts "that the inflammatory origin of ulceration of the stomach appears to be undeniably established. Accurate investigation has evinced that the ulcerative solution of continuity is preceded, on all occasions, by more or less hypertrophy and hardening of the mucous membrane in which it arises. In those ulcers which are consequent on an acute inflammation, this is less obvious than in chronic cases; and on the other hand also, in some of the most chronic forms, occasionally little alteration is found in the parts surrounding the ulcer. Yet these appearances are so commonly found, that it gives room for the inference that ulceration is a change which has a secondary relation to the foregoing inflammatory alterations in the stomach. . . . . It is obvious, likewise, that as it commences by inflammatory action, its extension, whether in breadth or depth, is to be ascribed to the occurrence of the same condition which is from time to time kindled in the part."

In the same work, Carswell enunciates a similar doctrine, and ulceration of the stomach is treated of, under the head of gastritis, by Dr. Stokes. Abercrombie, along with many of lesser note, may be referred to as taking the same view. On the other hand, Rokitansky asserts that "the perforating gastric ulcer is in no way connected with gastritis, and cancer, though it is often mistaken for these affections." Again, he says:—"It has not been clearly ascertained in what shape the malady takes its origin, and in what manner the further development is effected. It is probable it commences with an acute, circumscribed, red softening (hemorrhagic erosion), or with a circumscribed sloughing of the mucous membrane ; it is still more probable that the ulcer increases in this manner, the tissues at the base of the ulcer sloughing and exfoliating layer by layer." Handfield Jones takes much the same view, and compares the process to that by which simple ulceration of the cornea takes place:—"Both, when the system has made no reparative effort, may have smooth level margins; both may heal by the deposition of fibrine at their base and around their margins; both show, when they advance unchecked, a decided tendency to perforate the tissue in which they exist. In both, the ulceration is evidently not the result of violent inflammation, but of a local loss of substance or disintegration. It seems as if the tissue slowly liquefied, molecule by molecule, in a given part, in consequence of defect of assimilative power. The process in the case of the cornea is evidently not identical with sloughing, such as occurs in purulent ophthalmia, and there is reason to believe that the same is true also of the analogous change in the gastric parietes." In confirmation of this view, the same author, in his work on Diseases of the Stomach, adduces the fact that, of the eight cases he gives, there was only one in which there was not some tolerably sure indication of local or general failure of vital powers in other parts besides the stomach, and he further argues that, as a tonic treatment is well known to obtain the cure of the ulcer in the cornea, it seems highly reasonable to suppose that it would avail equally in the case of the stomach.

In a work specially devoted to one form of disease, concerning the nature of which there is so much uncertainty as the foregoing extracts indicate, it cannot but be regarded as a serious defect, that the difficulties in which it is involved should be passed over with merely a cursory notice in a chapter devoted to "Pathology;" nor can the statement in the second part, that ulcers of the stomach resemble ulcers in the leg, and may arise under very different causes, be taken as compensating for the void in the first part. We may have—

> "No more reason to assume an invariable commencement of the gastric ulcer by hemorrhage, or by softening, or by a submucous deposit of lymph, than we have to restrict the beginning of what is evidently a similar process of *destructive absorption*[a] in the limb to an ecchymosis, a pimple, a superficial abscess, a burn, or a varicose vein."

But, as in the cases thus referred to, the surgeon regards it of no trifling importance, in deciding his treatment, to ascertain the cause of the ulceration, so must the physician who wishes to treat scientifically the affections of the stomach have as clear ideas as to the actions going on in the part as his sources of information will enable him to obtain.

The very different appearances presented by the margin and base of the ulcers in many cases, as described by Dr. Brinton in the following passages, show that he is correct in believing that they do not always arise from the same mode of action. When these are considered, along with the peculiarities of the constitutions in which ulceration occurs, in some cases debilitated, anemic, chlorotic, as in the young non-menstruating female, where all the vital processes are imperfectly performed; and in others as in the adult man, where these processes may be in full activity, but the stomach long exposed to irritation from spirit-drinking and irregular living, it will be evident that an exclusive adherence to either of the foregoing views must be erroneous; and that the thickened, raised margin and indurated base, must proceed from something more than the attempts at reaction.

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[a] Is this term used loosely, or does Dr. Brinton adhere to Hunter's theory of ulceration?

"In some instances there is little or no evidence of inflammation in the neighbourhood of the lesion, which consists of a mere removal of the mucous membrane over a circular space, that forms a shallow but level pit, with a sharp, smooth, vertical edge, as though it had been punched out. In other cases, that appear to form the majority, the mucous membrane that constitutes the immediate margin of the ulcer is somewhat swollen, so as to be raised a little above the level of the adjacent mucous surface. And a microscopic examination shows that this thickening, which is always accompanied by induration, depends upon an exudation of lymph into the areolar tissue beneath the mucous membrane, as well as into the matrix of the latter tissue itself. In short, there can be no reasonable doubt that we have here a slight but appreciable amount of inflammatory reaction; and, that in respect of its nature, this reaction is closely akin to that adhesive inflammation of the peritoneum or neighbouring viscera to which we shall presently allude. In many instances, indeed, the swelling and induration around the ulcer far exceed that just mentioned, and convert the mucous membrane, for the distance of half an inch, an inch, or more, into a thick, brawny mass, which has sometimes been mistaken for cancer. . . . . . The history of the lesion may be connected with what seems to be the most obvious explanation of that maximum, minimum, and medium inflammatory reaction and thickening which we have indicated in the above remarks. As one might expect, the simple punched-out ulcer is usually either a small or a recent lesion, on the one hand, or is associated with a weakly or cachectic (in the female often a chlorotic) state of constitution, on the other; while the maximum of thickening is generally found in connexion with the same circumstances which favour the occurrence of adhesive inflammation on the exterior of the stomach: and among these, especially, with a large size and long duration of the ulcer. It is, however, curious to notice how frequently it occurs in comparatively young subjects, many of the best instances recorded having been persons of about the age of twenty or twenty-five. Still, this fact does not qualify the preceding statement as to the usual duration and diameter of the indurated ulcer, but seems merely to express the degree in which the inflammatory process is capable of being heightened by the vigour of youth.

"The *base* of the ulcer, so long as it is formed by the tissues of the stomach itself, presents appearances similar to those of its margin. Its usually firm and hard consistence is derived, partly from the density of the areolar muscular tissues originally present; partly from an increase of their cohesion, due to that infiltration of fluid or exudation of lymph which inflammation generally brings about. In others (and by no means unfrequent) cases, the progress of ulceration, apart from any such reaction, is betrayed by the soft, flocculent, or even gelatinous consistence of the floor of the ulcer; where we sometimes see flakes of dead tissue, the size of which almost entitles us to regard them as sloughs."

The *duration* of the disease is ascertained with difficulty; making allowances, however, for errors, the range of duration is remarkable:—

"In what are certainly exceptional cases, the ulcer has been known to be fatal in as little as ten days; generally by perforation, sometimes by exhaustion caused or hastened by vomiting, very rarely by hemorrhage. But in the majority of instances, a period of several weeks or months precedes the fatal event. And an extension of this period to years seem to be not uncommon. Among cases of this kind—possibly relapses, but more probably continuous, open ulcerations—I find in my notes, one of 35 years, two of 30 years, three or four of 20, four or five of 15, and several of 10, 7, 5, and 4 years' duration.

"The *healing* of such ulcers, by a process of cicatrization, appears to be much more frequent than is generally supposed. The examinations of Dittrich, Jaksch, Willigk, and Dahlerup, reveal a total of 147 scars and 156 ulcers, making the proportion of the former nearly equal to that of the latter. . . . . . In other words, half the instances of this disease undergo what is probably a spontaneous cure."

Though this disease is by many named the "perforating ulcer," the inquiries of Dr. Brinton lead him to the conclusion that perforation should be regarded as rather an exceptional occurrence, taking place in a proportion which is equivalent to about 13·4 per cent. of cases of ulcer. The sex of those cases offers nearly the same proportion as the ulcer generally, about two females to one male; but perforation in females occurs most frequently early in life, and in males at the more advanced periods. A careful inquiry shows that the whole of the excess of cases of perforation in the female falls on the sixteen years of life which intervene between the ages of 14 and 30, while nearly two-thirds of that excess belong to the six years between 14 and 20; but Dr. Brinton does not believe this to depend on the physiological changes taking place in the female constitution at this period.

There are about twenty cases on record where the perforation, instead of, as is general, giving rise to a fatal peritonitis, resulted in chronic abscess and fistula. This is due to the limited diffusion of the gastric contents; but what restrains them is, Dr. Brinton says, not always easy to specify. A consideration, however, of the complete fulness of the abdomen, and the pressure exerted by the viscera on one another, which serves so important a part in preventing effusion after wounds of the intestines, as is now very generally admitted by surgeons, would lead one to wonder rather that the diffusion of the gastric contents is not more frequently limited, than that it is ever so; and to ask whether this might not be more frequently the case, if it were not for the purgatives and other injudicious domestic remedies so frequently had recourse to on the occurrence of the perforation.

Hemorrhage and exhaustion are other causes of death in cases of gastric ulcer which are fully investigated; on these we shall not dwell, but close, with one more extract, our notice of this part of the work, the publication of which has conferred an essential service on medical science, by affording a guide to all future investigations on the important subject of which it treats:—

> "We may end this brief sketch by a summary which well illustrates how much we have yet to learn respecting even the more obvious pathological relations of this important malady. Let us assume (what, however, it would be very rash to assert) the accuracy of all the conjectures to which the preceding statements have led us. Let us suppose that of every 100 ulcers of the stomach, 50 cicatrize, 13½ perforate its walls, 3¼ erode its larger vessels, and 2 or 3 kill by the sheer exhaustion and inanition they involve; we have still a proportion of about 30 ulcers in every 100 left quite unaccounted for. In other words, we have yet to determine the termination of nearly one-third of all the instances of this lesion: and are ignorant whether the presence of an ulcer in the stomach heightens the liability to disease in general, or to certain maladies in particular; or, finally, whether the persons who are the subject of such a lesion have merely the ordinary liability to most other maladies, failing the access of which the ulcer does but anticipate, hasten, or increase that gradual failure of the nutritive functions, which is one of the most essential elements of death by old age."

The length to which this notice has extended forbids any very minute analysis of the remaining parts. This is of the less importance, as the extracts already given must show the style of the work, and prove that it is one worthy of a place on the table of even the most hurried practitioner.

In the second part a typical case is given, and then the several symptoms are carefully examined, and their bearings on the pathological conditions fully illustrated. The diagnosis generally is then discussed, especially with reference to two questions:—1st. "What is the minimum of evidence that will justify us in affirming the existence of an ulcer of the stomach during life? 2nd. What are the diseases with which it is most likely to be confounded?" To the first of these Dr. Brinton replies that he thinks—

> "That nothing less than all the chief symptoms enumerated entitle us to pronounce a decided opinion. In other words, unless the pain possess the characters attributed to it, unless this pain be accompanied by vomiting, and unless there be evidence of hemorrhage having occurred in the course of the malady, there is no sufficient basis for a definite diagnosis of the existence of a gastric ulcer. The date, duration, and frequency of the pain chiefly indicate some morbid condition of the mucous membrane of the stomach. The vomiting adds that this disease implies great irritation of the nervous centres connected with the organ. And it is reserved for the hemorrhage to show that the disease is such as to involve an absolute breach of continuity in the structure of the stomach."

However, there are many cases beyond the limits of secure diagnosis, in the treatment of which we should, as Dr. Brinton suggests, act on our suspicions:—

> "It is in obscure and uncertain cases of this kind that it is most important for us to be thoroughly acquainted with the whole characters of the disease, as shown in its more chronic and typical forms. The pathology of the lesion, in general, must supply any casual deficiencies in the physiognomy (so to speak) of the particular instance. Above all, we must remember that it is our first duty to be useful, and that suspicions which fall far short of definite diagnosis may yet be sufficiently important to dictate the whole plan of treatment. Suppose, for example, that we are consulted by a patient for protracted or severe dyspepsia, which has seriously affected the general health, and is associated with pain and tenderness in the epigastrium, and pain in the interscapular region, increased or provoked immediately after the ingestion of food; if, on further inquiry, it turns out that this pain is especially called forth by proteinous substances, or by hot liquids, and that it is affected, as above described, by movement, rest, and posture,

there can be little objection to our keeping steadily before us the possibility of a gastric ulcer. Such a suspicion, it is true, guides us to a specific course of treatment, but that treatment involves neither pain nor danger of any kind, and scarcely more severity of diet than many a dyspeptic sufferer would gladly submit to in order to secure the removal of his distressing symptoms. If unfounded, it does no harm; but, if well founded, it effects incalculable good."

As to the diseases with which ulcer is most likely to be confounded, cancer, Dr. Brinton thinks, bears the closest resemblance to it, and is distinguished with greatest difficulty. He has well contrasted the leading symptoms, but he has omitted to notice the frequent absence of pain in cancer of the stomach, and the occurrence of enlarged and tortuous veins in the integuments of the abdomen: symptoms difficult of explanation, but that are often of importance in the diagnosis.

In the third part the treatment of the disease is considered. Dr. Brinton, like most authors, attaches greatest importance to the proper regulation of the diet, and the directions given by him are of a highly practical nature; but for these and the treatment generally, we must refer to the work itself, the careful perusal of which, we are satisfied, will afford pleasure and profit to even the most experienced.

In a future edition we hope to see some points more fully treated of, and we would suggest the addition of a section on the medico-legal questions to which the sudden occurrence of the symptoms of perforation have so often given rise.

A Report upon some of the more important Points connected with the Treatment of Syphilis. By Holmes Coote, F. R. C. S., Assistant Surgeon to St. Bartholomew's Hospital, &c. London: Churchill. 1857. 8vo, pp. 141.

The principle of Mr. Holmes Coote's book is a good one, namely, to give the results of his own personal observations, and to endeavour to draw from these results such conclusions only as shall seem of necessity to follow from them. Were all writers on this eminently vexed question of syphilis to follow out a similar plan, much that is obscure would be cleared up, and much that is contradictory would be reconciled. What is wanted is honest observation, apart from preconceived theory or opinion, and we rejoice to see Mr. Holmes Coote leading the way in the right direction. Having said thus much in favour of the author's mode of proceeding, we shall now endeavour to glean out some of his deductions for the benefit of our readers. This is not always easy, owing to the unevenness of his style, which is sometimes curt, sometimes involved and obscure. The book is a collection of rough notes made, we should say, with a view to the future publication of a more extended work; and, as such, is useful, not only to the author, but to those who are, like him, endeavouring to elicit the truth as regards syphilitic affections.

In his opening remarks Mr. Holmes Coote states that he is—

> "Far from regarding venereal complaints in that very serious light which some would make us believe, viz., that they are interminable in their results, and pass out of one infection from generation to generation, blighting the growth, and being the parent of an endless variety of ailments."

He says:—

> "It appears to me that the poison, in general, wears itself out except in the very severe cases. Fortunately the transmission of syphilis from parent to offspring is comparatively uncommon."

He also comes to the conclusion that the diversified peculiarities of syphilitic sores are due to the action of one poison upon various tissues, and that the occurrence of bubo has no influence upon the constitutional effects.

The book consists of eight chapters. In the first, which is introductory, he states his opinion—

> "That syphilis and gonorrhœa are coexistent with promiscuous sexual intercourse, as practised by the inhabitants of Europe, i. e., where one woman receives several men. They scarcely exist among the inhabitants of the East, where the practice of polygamy is universal, unless, indeed, they have been introduced, as is the case in our Indian possessions, by the formation of large military depôts, or the construction of cities. The conditions necessary to call forth the venereal disease seem to be the same universally, namely, a large assemblage of men, with an inadequate proportion of females."

Mr. Coote's opinion is in favour of the spontaneous origin of syphilis (that of gonorrhœa is admitted); but he grounds it less upon any ascertained facts, than upon strong probability.

We perceive nothing worthy of note in the second chapter, which treats of blenorrhagia and gonorrhœa in both sexes in an extremely superficial and unsatisfactory manner.

The propositions laid down in Chap. III., on primary syphilis, are:—

"1. *There is but one syphilitic virus.*

"2. *When the ulcerative action is chronic, the natural structure of the part on which the poison is acting determines the character of the sore.*"

Under this proposition we find the rather startling assertion that the dense structure of the glans penis renders the occurrence of indurated chancre in this situation impossible. We can only meet such a statement by the counter-statement that we have met the indurated chancre on the glans penis not a few times, and we have little doubt as to which assertion will meet with corroboration from most of our readers.

"3. *Phagedæna and gangrene occurring during the course of the disease depend as much on idiosyncrasy, either natural or acquired, as on the nature of the poison.*

"4. *Every form of primary disease may be followed by constitutional affections, the nature and duration of which no one can predicate.*"

As regards treatment, we find absolutely nothing new: we do not say this as a matter of blame, for, as regards treatment, the present age of practitioners is ever striving after something new, and the danger is rather that what is good and old will be forgotten. Mr. Coote is a moderate anti-mercurialist, and quotes Dr. Graves, among other *surgeons*, as deserving merit for opposing the over-salivation practice. Mr. Coote further believes in the great efficiency of complete cauterization of the sore, if small, and spreading without induration; for the rest we shall let him speak for himself:—

"In the case of a non-indurated sore spreading feebly, and showing signs of incipient granulation, the administration of mercury is injurious, as retarding the healing process, and in no way protecting the patient from secondary accidents. When a sore continues to spread quickly, or, after seven days, shows no inclination to heal, mercury may be given with advantage. That mineral is also required when syphilitic induration exists in the slightest degree. The administration of mercury in cases of primary phagedena requires the nicest discrimination. It is useful in many cases of chronic phagedæna, but generally dangerous, if not positively injurious, in the acute varieties."

Believing, as he does, that profuse suppuration confers no immunity from secondary symptoms, Mr. Coote recommends great delay in opening buboes, and the use of every means to resolve them; he disapproves of leeches, and recommends mercurial frictions and plasters; and, when openings are necessary, that they should be made longitudinally, not parallel to Poupart's ligament. All this, though very good, is not new, and we should apologize to our readers for noticing it, but that we are of opinion what is good practice cannot be brought before our minds too often.

The chapters on inflammation affecting syphilitic sores, and on diseases resembling syphilis, are so meagre and deficient, that we are at a loss to account for their insertion in the work at all. When treating of secondary syphilis, in reference to Mr. Acton's opinions (viz., "that the simple and the phagedenic sores are rarely followed by constitutional syphilis, whereas the indurated chancre rarely, if ever, fails to be succeeded by the most positive secondary symptoms"), he says:—

> "I beg, with every respect, to dispute both positions. . . . . It appears to me that it would be more correct to say, that no one who has primary syphilis in its slightest form can be safely guaranteed from the occurrence of constitutional disease; but that, if six months elapse after the healing of the primary sore, the patient remaining well, the chances are greatly in his favour that he will not experience any further annoyance. An exception to this, however, must be made in the case of primary phagedæna, because experience teaches us that in this form of disease the interval between the primary and secondary symptoms may extend over from ten to fifteen years. The peculiar danger attending the Hunterian or indurated chancre arises from the fact of its being obstinate and chronic in its course; and the longer the primary disease remains, so many more are the chances of constitutional infection from absorption."

With regard to the contagion of secondary syphilis, he holds the extreme doctrines, and gives his complete assent to Professor Porter's opinions on the subject of the transmission of the poison through the semen without sores, even when impregnation does not take place.

We must here take leave of the author. His book is, as we have said, a step in the right direction; but, unless followed up, we fear that in its present imperfect and crude form it cannot be viewed as a satisfactory step.

Traité de l'Angine Glanduleuse, et Observations sur l'Action des Eaux-Bonnes dans cette affection, précédés de considérations sur les Diatheses. Par Noël Gueneau de Mussy, Médecin de l'Hopital de la Pitié, &c. Paris: Masson. 1857. 8vo, pp. 269.

The name of Gueneau de Mussy is familiar to the profession in Ireland, in connexion with our terrible fever epidemic of 1847–

1848, which M. Henri de Mussy, cousin of the author of the volume now before us, studied with great diligence, in conjunction with the lamented Oliver Curran. We have read this treatise with great interest also, as coming from a pupil of the great Chomel, to whom he has addressed it in an affectionate classical dedication.

The object of M. de Mussy has been to establish a complete analogy between the diseases of the skin and those of the mucous membrane. He believes that their close resemblance in structure, function, and vicarious action, might induce us, *à priori*, to conclude that the pathology of their organic lesions would be identical. Upon this hypothesis, which is not new, and was even stated by Broussais in his revival of natural pathology, the author refers all the affections of the pharynx, larynx, œsophagus, bronchi, &c., to the spread of some herpetic or analogous eruption, creeping along the continuity of surface, and producing constitutional effects, modified by the nature of the tissue subjected to its attack. The principal arguments upon which M. de Mussy rests his hypothesis are as follows:—

1st. The marked predisposition of persons suffering from herpetic and squamous eruptions, eczema, pityriasis, &c., to affections of the throat and pharynx, and *vice versâ.*

2nd. The outbreak of the herpetic eruptions in the course of tracheal or pulmonary disease, as herpes labialis in pneumonia, &c.

3rd. The frequent termination of coryza in bronchitis, pneumonia, &c.

4th. The facility with which this train of morbid symptoms may be cut short by the timely application of some escharotic, such as nitrate of silver, to the tissues likely to be affected.

M. de Mussy has described with great exactness the appearances observed in sore throat, occurring in persons of relaxed or strumous habits; and he has given a well-executed plate representing the peculiar granular appearance of the pharynx in such cases. The special affection of the follicular tissues which he refers to is familiar to most practical physicians, although we believe it has not been minutely described in any systematic work. He lays great stress upon the teazing cough or *hemming*, and the scanty viscid expectoration which accompanies these forms of disease; and here we have some very interesting remarks upon the pathology of the affection known in these countries as clergyman's sore throat.

In the treatment of these affections Dr. de Mussy gives the palm to the sulphurous mineral waters of the Pyrenees, especially the Eaux-Bonnes; and relates many instances of successful treatment at these springs. When we take into account the careful dietetic system pursued in these cases, we are inclined to accept the unrivalled remedial powers of the Eaux-Bonnes *cum grano salis.* Besides, these pharyngeal affections are very recurrent, often disappearing suddenly, and returning after an indefinite period of time. The American treatise of Green has made much impression upon Dr. de Mussy, who has quoted very largely from that work. No second opinion can be entertained by practical men as to the utility of nitrate of silver applied to the pharynx, and even in certain cases to the larynx itself; but the idea of passing a sponge into the bronchi, and squeezing out a cauterizing fluid into the lower air-passages, is a chimera, which has already vanished into oblivion, with other Transatlantic wonders. We consider this treatise, in fine, a valuable addition to the many practical and scientific works which the French medical school has just reason to be proud of.

The Change of Life in Health and Disease: a Practical Treatise on the Nervous and other Affections incidental to Women at the Decline of Life. By Edward John Tilt, M. D., Senior Physician to the Farringdon General Dispensary and Lying-in Charity, &c. &c. Second Edition. London: Churchill. 1857. 8vo, p. 291.

Though by no means a modern fashion, yet it is becoming every day more and more general, especially with the members of the medical profession, to write a book of some kind or other, for the chief purpose of attracting public notice. So far back as " several years," Dr. Tilt presented the public with a " little work," of which he now brings forth a second edition. The gem has expanded; the little volume has swollen into a big book, from the accumulation of " materials," which, the author informs us, he has been diligently collecting during the " several years."

The " little work" was on " Diseases of the Change of Life;" the title of the present volume is " The Change of Life in Health and Disease." On the back of the present addition appears in gilt letters these words only, " The Change of Life;" so that, on first taking it up from our library table, we were under the impression the author, whoever he was, had mistaken the character of our Journal, and had sent a religious work for review; upon seeing the name of Tilt, however, our error was at once corrected.

In limine, we take the opportunity, on behalf of the medical public, for, though the profession is mentioned, perhaps it may not be included, of acknowledging the "apology" which Dr. Tilt has offered for the delay in appearance of the second edition of his "little work," and, at the same time, of assuring him that such a step, on his part, was quite unnecessary. We live in a happy age; one overflowing with unselfish philanthropy; the instant a deficiency in any system or work is discovered, some kind individual steps in and sets all right, and that from the abstract love of doing good. Should a "want" in "medical literature," especially, be experienced, it is at once remedied. We have no hints in any of our medical works to help us in the treatment of the diseases of women at the critical period of life, and so Dr. Tilt set himself to work to supply them; for which we are in duty bound to feel most grateful.

"In none of our classical works," says Dr. Tilt, "have I found diseases of the C. of life" [the letter, we presume, means "critical period," and is not to be used in a phonetic sense] "brought within the range of the laws of general pathology, and no general principles of treatment are laid *down for the guidance of others*."

And so Dr. Tilt, in his philanthropy, has accumulated, "by a mental process, very tedious, material for a fuller elucidation of the subject."

"Sir C. M. Clarke" [we are told, in commenting on the diseases of this epoch], "states that it is not unusual with women to refer all their extraordinary sensations to the *C. of life*."

And *we say* that Dr. Tilt does exactly the same as the women mentioned by Sir C. Clarke. Every extraordinary sensation, every possible disease occurring to women between the ages of 40 and 45, are set down to be depending more or less upon the "C." of life.

"The present volume," says the author, "illustrates the period comprised between the 40th and the 55th year, and in addition to other data, it embodies the tabulated estimates of the symptoms and diseases observed among 500 women, who were at the C. of life, or who had passed it. The facts I have collected, the pathological views to which I have been led, and the plans of treatment they have suggested to me, having borne the test of experience; I venture now to place them before the profession."

These 500 women whose cases may be said to form the basis of Dr. Tilt's work, were, it seems, the subject of 119 different diseases or "morbid liabilities at the critical period;" some of the 119 morbid liabilities attacking a large number of the 500. Thus, 459 were the subjects of "nervous irritability;" 287 had "flushes," &c., &c. The list of morbid liabilities given by Dr. Tilt covers a page and a half of small print in double columns, and contains, absolutely, all "the *natural* shocks that flesh is heir to," from a boil on the perineum, "boils in *seat*," to disease of the brain, "apoplexy, and hemiplegia." This long list of ailments Dr. Tilt has separated into groups, and to each group is devoted a chapter: each chapter contains some general remarks on its statistical heading, a few cases, and some observations on treatment. We have heard that some surgeons, who have made a special study of syphilitic disease, were said to look upon every symptom, sore, or spot presented to them with a "venereal eye." Surely, Dr. Tilt may, with some truth, be said to view all diseases occurring in women between the ages of 40 and 55, with a "climacteric" organ.

The period of puberty is viewed in the same manner as, and contrasted with, the period of cessation.

Statistics are the fashion of the day,—happily, they are readily procured when required,—and their use was not lost sight of by Dr. Tilt when *making* his book; consequently, we are presented with numerous "Tables," some of them curious enough, and, perhaps, useful. An index affords easy access to them. There is a table of marriages in Ireland for eleven years; another, showing the number of bachelors, spinsters, widowers, and widows, at different ages, &c.; a fecundity table, for Sweden and Finland, and one showing the length of the "dodging time." In all, thirty-three.

The volume also contains what may be considered as a small system of "C." (to use the author's own contracted appellation) therapeutics, and an analysis is displayed of the waters of Aix and Savoy, together with an intimation that Mr. Taylor, of Baker-street, makes up Dr. Tilt's "Flush Powders," for which, however, the receipt is given. There are receipts for two descriptions of flush powders, and these have been found most useful: by the way, practitioners do not pay "sufficient attention to flushes and chills."

Hygiene holds a prominent position. The author remarks, on the hygiene of the "nervous system;" the hygiene of the "muscular system;" that of "the digestive functions;" of the "cutaneous functions;" the hygiene of "the reproductive organs;" and mental and moral hygiene. Physiology is not omitted: at the very first page the reader is prepared for some new and striking revelation in that science:—

"The present century," remarks Dr. Tilt, "has witnessed magnificent discoveries in the pathology of the brain and of the spinal marrow; but it will be obvious to those conversant with medical literature, that the pathology of the ganglionic system has received comparatively little attention; neither can it be much advanced until EXPERIMENTAL PHYSIOLOGISTS have accurately investigated many points connected with the *physiology* of the ganglia and their nerves. My object has been to *prepare the ground* for other labourers, by throwing on an intricate subject *all the light* I could collect."

Well, on searching for all this "*light*," we found a physiological account of the changes which the ovaries undergo, similar to that in *all* school-books; we were informed that the ovaries have the power of exciting certain changes in the constitution, and that they chiefly exercise their influence through the medium of the nerves:—

"That while sensation and motion are intimately dependent on the cerebro-spinal system, nutrition is dependent on the ganglionic; and that, in the central ganglia, situated in the epigastric region, there is a condensation of ganglionic nervous power, which gives and receives from each organ a variable impetus." Again: "If the ovarian stimulus be insufficient, it will retard the first appearance of menstruation."

And *vice versâ*. Still, notwithstanding these curious facts and *new lights* in physiology, we are told that,—

"It is not surprising that organs similarly endowed should fraternize; and that, whether at each M. [which means menstrual] period, at puberty, or at the C. of life, undue ovarian influence should give rise to more or less nausea and sickness, &c."

We have no hesitation in saying, that Dr. Tilt's book is, in our opinion, one of those literary manufactures of the present day, which issue so abundantly from the press as the production of *certain* members of the medical profession. It is an "accumulation of materials," and nothing else, which would tend to perplex a student, and could not be waded through by a well-educated physician. The only class by whom it may be appreciated is that of the individuals between forty and fifty-five years of age, whose particular constitutions Dr. Tilt has made his study. These, when wearied of the dry detail, or appalled by the perusal of the long list of diseases, some of which they must undergo, may turn for solace to the following passage:—

"Besides the vast improvement in health, it must not be thought that the C. of life implies *the loss of all personal attractions*. The beauty of youth charms that of maturer age, excites admiration;

but in many women there is at the C. of life, and long after, an *autumnal majesty*, so blended with *amiability*, that it fascinates all who approach them. To those *fired* with a *little noble ambition* it may be safely said, that the home government of society, from *Almack's* down to the *lowest of our social strata*, offers a wide field of employment to women at this period of life. Many never think of cultivating their minds until they find their influence fading with their charms, and then set about acquiring a less perishable empire, and employ this period of freedom in literary pursuits. . . . It is a matter of history how society has been influenced by the drawing-rooms of Mme. Lambert, Mme. de Tencier, Mme. du Deffand. Those acquainted with French society at the present time will remember the influence of the late Mme. Recamier over a large circle of talented friends; *and during my residence in Paris I have, myself*, frequently witnessed the benign influence of Mm. Swichine prompting those around her to what was great and noble," &c.

Query, was it Mme. Swichine who prompted Dr. Tilt to write his book on the "Change of Life"? Should any of the "beings" between forty and fifty-five, whom, as old maids, it may not be easy to conciliate, peruse the subjoined, they cannot fail to soften:—

"The most distressing appeals to *medical sympathy* are made by those who, when unnerved by the C. of life, find themselves *alone* in the world, *bereft*, when most needed, of the solace of *filial piety* or the *gushing sympathies* of conjugal affection. One can only at first respond to such appeals with a *sympathizing look* and a *silent pressure of the hand;* but, *should tears burst their bonds*, lightening the suffering spirit of half its load, sweeping away black sorrow, disquietude, and trembling doubts, then it may be hinted that time steals even sorrows from the heart, doubtless because they are sweeter than joy, and that, after a brief period, nothing will remain but calm judgment and the unmoved remembrance of past goodness, where it was once thought that *impassioned love* and devoted tenderness must be eternal," &c., &c.

Who can deny that poetry finds a place in Dr. Tilt's work (in justice to him, we must say that the italics are our own), after reading such passages as the above, more particularly the last. Oh! how some sentimental, antiquated virgin will, "as the bee upon the flower," "hang upon the honey of" his "eloquent tongue." And should we find fault with our author for combining "poesy" with medicine? Surely not; in these days, when physicians find it *convenient* to write for the *general public*, such little embellishments are necessary, and Dr. Tilt is only doing what others do.

Farewell, then, to Dr. Tilt; we leave him to gather more materials for the construction of his third edition, fervently hoping that it may not be completed till after the lapse of "several years." In the mean time, "should the changes of life ever force us to rove" to London, we need scarcely say that not being of the magical age or sex he publishes for, we should, after what we have written, fear to call at 11, York-street, Portman-square, to consult him.

The Functions and Disorders of the Reproductive Organs, in Youth, in Adult Age, and in Advanced Life: considered in their Physiological, Social, and Psychical Relations. By WILLIAM ACTON, *late* Surgeon to the Islington Dispensary, and *formerly* Externe to the Venereal Hospitals, Paris. London: Churchill. 1857. 8vo, pp. 108.

LET us pause for a moment, and reperuse the above title. Yet, stop! we have not quoted the entire page; for at the foot is the announcement, in small italics, that the book is "reprinted from the third edition of his Practical Treatise on Diseases of the Urinary and Generative Organs."

Before we proceed further, we are naturally led to inquire, why does Mr. Acton not reprint the whole of a work which has already survived three editions, or whence the necessity of affixing a new and popular title to an old story in another shape? We trust we shall be able to reply satisfactorily to these queries before we lay down the work and our pen, or we err egregiously.

To commence, then, with the preface. The author herein states, *in limine*, that he ventured in the last edition of his work, just alluded to, to treat of the *functional disorders* of the urinary and generative organs; that since that period he has accumulated much additional material; and he now presents the results of his practical experience. He admits freely that he has drawn very largely upon the writings of Owen, Carpenter, and Rymer Jones, in his physiological descriptions; while to Lallemand, Parise, and Roubaud, he is also much indebted for observations on the aberrations of function to which the generative organs are liable; "preferring," he says, "that they should share the responsibility of many statements which I could establish in my own experience." Further on we read:—

> "Should these pages accidentally fall into the hands of laymen of sense and information, many of the facts and opinions to be found therein will, I apprehend, *prove at least suggestive.* The *continent*

> *student* will find reasons for continuing to live according to the dictates of virtue. The *dissolute* will be taught, on positive and irrefragable grounds, the value of self-control. The *married man* will find advice and guidance; and the *bachelor*, who is often placed in a trying social position, will glean consolation from observing, that not only are his sexual sufferings appreciated and understood, but that rules are given him for their mitigation. The *physiologist* will see his principles reduced to practice. The *comparative anatomist* will judge how much light his investigations on the animal kingdom have thrown upon sexual relations in man. The *surgeon* will learn how to manage that difficult class, the hypochondriacal, and how to address himself to the audacious old libertine, who, setting at naught [*sic*] religious principle and social customs, acts in open defiance of the laws of his country. Lastly, the *advocate* who practises in the ecclesiastical or criminal courts will here find the basis for many valuable arguments,—nay more, he may learn how, in many cases of guilt, fair cause may be shown for a culprit's committal to a lunatic asylum instead of a prison."

With what prescient sagacity he has supplied material for valuable reflection to the various sorts and conditions of men, into whose hands his modest little book may "accidentally" fall! At the same time, what shrewd reserve does he evince on the subject of the possibility of its finding its way into the hands of the young, the ignorant, the innocent! That we are not making a false application of the doctrine of chances in this latter remark, the sagacious reader may judge from the next paragraph of the preface. He goes on:—

> "I have been induced to publish *this part* of my third edition *separately*, because it is complete in itself, and contains information which has a more extensive bearing on the social well-being of society than other parts of the work, the bulk and *strictly professional nature* of which must render its circulation *limited*."

Having disposed of the preface, we must hasten with our task. In dealing with the work before us we would be brief, for we feel that our situation is not unlike that of an unfortunate chimney-sweeper, who, having got himself fairly within the flue, must press rapidly on to the end of his job ere he can expect to breathe fresh air. We trust our readers will forgive the homeliness of a simile which has presented itself irresistibly to our mind by reason of its very *smuttiness*.

The work, then, we are to understand, is not strictly a professional one; nevertheless, in some degree it is so; in fact, it appears to be made up of an agglomeration of very heterogeneous materials, without much regard to accuracy of arrangement; for we have in one page a copious extract deliberately transcribed from some of our standard works on physiology, then a piece of vididly poetic, but at the same time morbidly, may we not say mischievously, sentimental description of voluptuous and sensual excesses, the very perusal of which, we "apprehend, will prove at least suggestive;" then, perhaps, a little piece of sound sense in the way of hints or directions for the proper conducting of the moral and physical education of youth; hints, however, in no wise more valuable than those which may be found in many excellent works on educational subjects. Mixed up with all these we have here and there a little medicine, with perhaps some sapient suggestions regarding the mode of procedure to be observed by physicians in dealing with the more filthy frailties of our fallen nature.

The author has divided his treatise into two parts, the first of which, extending to page 51, descants upon the normal functions of the reproductive organs—1. In youth; 2. In adult age; and 3. In advanced life. The second treats of the functional disorders of the same organs in these three stages of life.

In the first part of the work (containing, as it does, much that is really good in its way, when placed in proper hands), there is enough in almost any one page to condemn the whole to the lowest level of Holywell-street. We write advisedly, and must tell the author that we approve not of the system adopted in works of this kind, namely, of sacrificing to the corrupt and vitiated tastes of a certain portion of the public, under pretence of writing for the profession, those disclosures which in a moment of suffering were made to the physician as to a confessor. He may seek in vain for *our* sympathies.

"I should be ill discharging the duties I owe *the profession* and those who have consulted me,"—and this, be it remembered, may fall accidentally into any hands,—" did I *pass by in silence* the scenes of sexual suffering which I have witnessed."

We forbear to transcribe the particulars of such cases, but would for a moment direct attention to one clause in the same page with the last quotation:—

> "Let the man who has married early pause, hear a voice seldom heard, and, when heard, seldom listened to. Let him learn that his felicity and his bodily ease may be imperilled even now, while he smiles in fancied security."

This is followed by a harrowing account of a tissue of miseries, described in the most inflated language, and which our author informs the public is only "one phase of sexual suffering."

The second section of the first part, namely, on the normal functions in adult age, abounds with plain speaking with a vengeance, nor has the author considered it necessary to prescribe technical bounds to his terms, but he treats of these matters with a freedom and grossness which are truly disgusting.

That medical writers must sometimes enter freely into particulars, which, however, are only intended for medical readers, we are well aware; this is unavoidable, and differs *toto cœlo* from the course pursued in the work at present under consideration, in which we find the author labouring to invest the minutest particulars of his theme with an extravagant importance—

"Exposing barbarously to wanton gaze
The mysteries of nature;"

while ever and anon he introduces lengthy quotations from Lallemand, Parise, and other writers of that school, as it were to relieve the temporary exhaustion of his own descriptive powers.

The second part of the work is thus subdivided:—

> "Div. i. Functional *diseases* in persons who do not know the consequences of repeated acts of sexual intercourse, and commit excesses from ignorance.
>
> "Div. ii. *Persons* who know the consequences of sexual excess, but cannot control their passions.
>
> "Div. iii. Debauchés who, indignant at the loss of power consequent on their previous excesses, stimulate the reproductive organs, for the purpose of gratifying their animal passions."

One extract from the second of these divisions, and we have done:—

> "This is a class of persons the consulting surgeon occasionally meets, deserving of great sympathy. . . . . They sometimes think this unnatural excitement is healthy. They pride themselves upon it, appear astonished at the surgeon wishing to remove the cause, and cannot comprehend that their constitutions have been much reduced by the fatigue which the organs have undergone. Common sense usually triumphs, and they feel intensely grateful for the relief they obtain. The surgeon must acknowledge, however, that these affections are frequently very rebellious. The duration of disease, prolonged residence in warm or unhealthy climates, or allowing the sexual passions unrestrained liberty, has often brought

the constitution into a very delicate state; still, great amelioration may be surely promised. *The means of cure cannot be here dwelt upon.* They must depend upon the particular affection present."

So much for the medical value of the work. In conclusion, it is almost superfluous to say, that we feel we cannot reprehend too strongly that "sacra fames auri," which could induce a man of education, as the author evidently is, to *prostitute* his professional honour in thus pandering to the worst passions of human frailty, by writing a book which, like the productions of Curtis, L'Amert, and many other members of that tribe of lewd quacks with which the great metropolis abounds, should be sold in a *sealed envelope* to mark its character.

PART III.

MEDICAL MISCELLANY.

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.

(*Continued from* p. 228.)

SESSION 1856-57.

Rupture of the Left Ventricle of the Heart.—Dr. **Popham** exhibited a recent specimen of spontaneous rupture of the heart. The subject of the case was a woman, aged 80, who was found dead in her bed, in the infirm ward of the Cork Union Workhouse. The people in the ward discovered her in the morning apparently sitting up, being on her knees, bending forwards, most probably having been at the time engaged at her prayers. Her death must have been immediate. She uttered no scream, or any other indication of death; and on retiring to bed the preceding evening, except that she complained of a little giddiness, she seemed in her usual good health. In appearance she was a strong, robust woman, very healthy for her advanced period of life. On opening the thorax, the pericardium was distended, and of a livid colour; and on slitting it up a layer of blood was in close apposition with the heart all round, but thickest in the dependent parts. On the anterior aspect of the heart, a laceration, about an inch long, was perceived; it began about an inch and a half from the apex, and terminated half an inch from it; its direction lay from the left very obliquely towards the right, the lower extremity being nearest the median line; the edges were lacerated in a zig-zag form, and some of the fleshy columns protruded from the rent; the heart was nearly 6 inches long, and $3\frac{3}{4}$ wide, flabby, its surface covered with fat. On opening it, the left ventricle was considerably dilated, and its walls thicker than ordinary; the mitral valve was normal, but one of the aortic valves was partially patent, a bony spicula projecting forward, and preventing the valve lying back against its wall; the aorta presented several cretaceous deposits; the lining membrane of the ventricle, at its anterior aspect, was very dark, and softened both above and below the rent; the rent was opposite the mitral valve, and did not extend to the septum; the extent of the laceration was larger within the ventricle than without; no blood was found in the ventricular cavity; the right lung was congested and adherent.

Remarks.—In the preceding case the laceration occurred during the period of repose, and there was nothing whatsoever in her case, either mental or bodily, to produce a shock. The heart presented two lesions of long standing, causing a difficulty in the circulation, viz., a dilated condition of the left ventricle, and an obstruction at the aortic orifice. When to these was added a state of chronic softening, the diseased condition of the ventricle allowed it to give way at the point of chief pressure. There was no attenuation of the ventricular wall at the part; it was more hypertrophied than in the opposite state; neither was there true fatty degeneration; it seemed to be a dark, pulpy softening of the muscular tissue, probably arising from some alteration in the blood.—*Read May* 14, 1856.

JANUARY 14, 1857.

DR. FINN, PRESIDENT, in the Chair.

Case of Caries of the First and Second Vertebræ.—PROFESSOR O'CONNOR exhibited the first and second vertebræ in a carious state, and detailed the symptoms as follows:—

The person from whom this morbid specimen was removed had been a sailor, about thirty years of age at the time of his death. There was nothing in his previous history which could be in any way connected with the disease of which he died. When admitted to hospital, his general health was good, so much so that he was refused admittance to the workhouse on the ground of being able-bodied. He stated that, about six months previously, he felt a pain in the nape of the neck, at first slight, but gradually increasing, till he found himself totally unable to turn his head without moving the whole body with it. If, in executing this movement, he gave the least uneasy jerk, it brought on most excruciating pain. In the erect position, and when walking, he was obliged to support his head with both hands placed under his chin; and when turning in bed he was obliged to carry his head round slowly by the assistance of his hands. For some time prior to admission he had pains extending down both arms, and a painful sense of burning referred to the back of the neck; there was also pain, on pressure, in this situation. He had no symptoms of cerebral disease at any time, except a slight attack of delirium, with coma once or twice, which quickly passed away on the administration of purgative medicines. For some time prior to his death he passed his fæces apparently involuntarily; but he had to the last sensibility in the extremities, and a power of moving them; and it is questionable whether the symptoms here referred to did not arise rather from debility, and a dysentery (which was the immediate cause of his death), than from paralysis of the sphincter.

Post-mortem Appearances.—On cutting down on the mass of muscles covering the superior cervical vertebræ, an abscess was discovered, containing about two wineglassfuls of pus; and on removing the vertebræ the body of the first was found entirely carious, together with the odontoid process of the second. The latter was completely adherent to the transverse ligament, within which motion was quite impossible. There was some lymph effused on the internal surface of the theca vertebralis, but not sufficient to cause pressure on the spinal marrow.

Professor O'Connor called attention to the fact of his having brought under the notice of the Society, on a former occasion, a case of caries of these vertebræ, in which the symptoms differed from that now before them, to the extent that in the former the patient, prior to his death, was paralyzed in almost every muscle in the body except those of respiration. The difference in these two cases was determined by the fact that, in one the inflammation excited by the caries was on the external, in the other on the internal surface of the vertebræ causing deposits of lymph on the membranes, and ultimate pressure on the cord.

January 28, 1857.

Dr. Harvey in the Chair.

Empyema; Pneumothorax; Tuberculosis of Left Lung.—Dr. Finn exhibited the left lung of an individual whose case presented the above complication.

Thomas Forde, aged 35, a labourer, was admitted " in extremis" into the North Infirmary, on the 30th December last, labouring under dyspnœa and harassing cough. He had been residing for some time in Cardiff, where, towards the close of the previous autumn, he contracted a severe cold, which, together with epileptic fits (to which he was liable) in a short time wholly incapacitated him from earning the means of subsistence. His symptoms gradually increased in severity; and the privations which he now endured, in consequence of inability to work, obliged him to apply for parochial relief. After receiving assistance for some time, he was transmitted, at the instance of the Poor Law Guardians, to Ireland. Removal, under such circumstances, and exposure to cold on the deck of a steamer, during the most inclement season of the year, necessarily aggravated his sufferings, and probably accelerated the fatal termination of his illness. His prostration was so extreme as not to admit of a careful examination of the chest; but inspection suggested the probable occurrence of pleuritis at some period of his illness, the left side presenting the altered configuration characteristic of that disease. Death took place on the 14th January, a fortnight after admission to hospital.

Autopsy.—On raising the sternum a considerable quantity of inodorous gas escaped from the left pleura; the lung, which was reduced to about a fourth of its normal volume, lay beside the spinal column, partially immersed in sero-purulent fluid. The upper third of the lung was united by the most rigid adhesions to the costal pleura. The lung tissue was infiltrated with tuberculous matter. A careful examination of the portions of the lung free from adhesions (which included two-thirds of that organ) failed to detect any communication between its interior and the cavity of the pleura.

It is doubtful, however, whether this should be regarded as a case of idiopathic pneumothorax. Some minute communication, which escaped notice, may have existed on the border line, separating the adherent and free surfaces of the lung. The mode of ascertaining the existence of a communication by the immersion of the lung in water, and by insufflation from the larger bronchus, would have failed to determine the point in this instance, the upper portion of the lung having been injured on the occasion of its removal from the chest.

Dr. Cremen exhibited a liver which he removed from the body of a woman, aged thirty years; it was considerably enlarged in its entire volume, weighing about 6½ lbs.; the colour was a bright red, evincing a state of extreme arterial hyperemia; the biliary tissue also seemed engorged; the gall-bladder contained some healthy bile; the duct was free; the liver was abnormally adherent to the diaphragm; the right lobe was principally enlarged, and presented an extremely convex, almost angular outline, on its superior surface, pushing up the diaphragm; the left lobe was also enlarged, and extended far into the left hypochondrium.

Dr. Cremen stated that he found the spleen natural in size and appearance; the stomach small and contracted; its walls were thickened; the mucous membrane pale and blanched; the lungs were extensively adherent, and contained a great amount of tubercular disease; the gums were ulcerated down to the alveolar process, and the teeth loose; there was extensive syphilitic disease of the genital organs; the labia were enormously enlarged and ulcerated on their internal surface. The individual had been a prostitute, and had probably been using quantities of mercury before death; the lower extremities were slightly anasarcous, and the peritoneum contained about a quart of serum. There was no apparent organic alteration in the liver, its increased volume being solely dependent on the hyperemia.

Dr. Cremen considered the specimen as illustrating the primary stage of cirrhosis, or the stage of enlargement of the viscus. There was no appearance of any previous peritonitis, and the incipient ascites must be referred to the liver.

FEBRUARY 11, 1857.

DR. FINN, PRESIDENT, in the Chair.

Rare Case of Intestinal Disease. By W. H. SANDHAM, M. D.—"An unmarried lady, aged 50, healthy appearance, and most cheerful manner, sent for me, from Queenstown, about three years since. On my arrival I found her in great agony, suffering from painful tormina and spasm all over the abdomen, but particularly referred to the right of the umbilicus, with great forcing, resembling the throes of labour, and distressing retching, and squeezing her abdomen between her hands with all her might, tears running down her cheeks, and her face presenting a most peculiar expression of anguish, which at once excited sympathy Her circulation not at all disturbed, being 70 to 80; tongue brownish; heat of skin natural. She said 'she felt satisfied that something was to pass, which, if once away, she would be relieved.' With the letter for me she also sent a phial containing a quantity of beautifully transparent pseudo-membrane, of a perfectly tubular form. She stated, 'that she frequently suffered from such attacks, and was delicate in mentioning it, and wished me to do anything I might think likely to give her permament relief.' After opiates to relieve the distressing tormina and spasm, I at once administered calomel and opium to ptyalism, with frequent anodyne stupes. I then gave full doses of castor-oil, which brought away great quantities of perfectly transparent pseudo-membrane of a tubular form, which corresponded in size, or rather resembled, the small intestines themselves, evacuated in separate pieces, varying in length from two to several inches. I continued the aperient treatment until all pain ceased, and no more of the adventitious membrane appeared in the evacuations; then administered tonics, &c. She continued for a considerable time free from every uneasy abdominal sensation, and she and I thought her disease conquered, but, in about nine months after, she was again attacked, and got no relief until a quantity of similar membranous tubes were evacuated. I attended her on two or three occasions after; she then left for the North, but, a few days back, I saw her, when she reminded me of the disease, and I determined to lay her case before the Society. She still suffers occasionally from this singular affection.

"*Remarks.*—This intestinal membranous deposit must be produced in a manner analogous to the adventitious membrane of croup, but certainly without the acute inflammatory action which usually attends the latter, and, fortunate for my patient, not at all so fatal. Her small intestines, or rather representations of them, must have been very many times produced, to my own knowledge; in any of the portions I examined, there were none so large as the colon or rectum; this leads me to conclude, the small intestines alone were the seat of the disease. It is strange how the intestinal mucous membrane can carry on its functions of secretion and absorption, and, at the same time, secrete or produce, I may say, a facsimile of itself. Not having subjected this singular production to microscopic investigation, I cannot say whether it presented any vascular arrangement, but it certainly differed in many respects from mucous membrane; it resembled more, in every respect, a serous membrane."

Dr. Cremen exhibited the morbid specimens, and detailed the following case:—Anne M'Loughlin, aged 28, of slight conformation and dissolute habits, was admitted into the Cork Workhouse Hospital, under the care of Dr. Popham, for the first time in April, 1854, with oppression of breathing, and a chronic discharge from the rectum. She was an unhealthy, pale-looking woman, with shoulders drawn up, a pallid countenance, and livid lips. On examination, no syphilitic sores were found to exist on the external genitals, but the rectum was ulcerated and patulous, and on introducing the speculum considerable ulceration was discovered; the sphincters seemed to have lost their contractile power; a copious muco-purulent discharge continually flowed from the bowels, with a mixture of blood; this discharge had been of some duration, and had greatly impaired her health; she had frequent and severe paroxysms of cough, and oppression, but no hemoptysis. She was relieved by the application of leeches, with sedative and astringent injections; and various medicines were used to restrain the discharge, but of these strychnia, and the muriated tincture of iron, exercised the most satisfactory effects. She was repeatedly in hospital, for the last two years, for thoracic symptoms, both the lungs having been found extensively diseased, with tubercular deposition; the catamenia had ceased for some years. About a fortnight before death she was seized with a sudden attack of oppression and dyspnœa, and seemed moribund; she, however, rallied for some days, but the symptoms returned, and death came on gradually. She retained her faculties to the last; the decubitus was usually on the right side, but she was obliged to assume the semi-erect posture for some time before death.

Autopsy.—There was considerable deposition of fat under the integuments all over the body; the muscles were paler than natural, and presented a fatty appearance on section; the greater and lesser omenta were densely loaded with it; there was none deposited in any of the viscera except the heart.

On opening the thorax, the pericardium was placed in the middle line, and even extended beyond this, over to the right side, for some distance; it was almost universally adherent to the heart; the latter organ was much enlarged; its surface, particularly anteriorly, was covered with fat; its muscular walls were soft, friable, and very easily torn; the colour, of a pale brown, almost amounting to yellow; the structure presented a granular or mottled appearance; fatty striæ could be seen all through it; a section left an oily appearance on the blade of the scalpel; the cavities were dilated, particularly those on the right side, a condition referable to the obstruction that existed in the pulmonary circulation. A portion of the heart's structure was submitted to microscopical examination, with a power of 350, by Dr. O'Leary, and an appearance was presented similar to that in Mr. Paget's work, vol. i. p. 127.

The left pleural cavity contained about three and a half pints of turbid fluid, of a sero-purulent character, with large flocculi of lymph floating in it; the fluid had an exceedingly fetid odour; the left lung occupied the usual position, as in extensive pleuritic effusions, and lay close up to the spine, between it and the angles of the ribs, firmly adherent at its superior part, and at its base posteriorly, whilst the central portion was free, and floated in the contained fluid; there was considerable deposition of tubercle all through the organ, with a cavity in its superior lobe. On raising the central portion, an ulcerated perforation was found to exist below and anterior to its transverse axis; it was about the size of a shilling, with jagged and irregular edges, and communicated with a cavity of the size of a large walnut; external to the margins of the perforation, to the extent of about 1½ inches, the pulmonary pleura was covered by a thin stratum of false membrane, but evidently not of sufficient strength to retain the pleural surfaces in apposition, and to prevent their separation on the occurrence of a forcible respiratory effort, which may be reasonably set down as the result in this instance.

The right lung was also firmly bound to the costal parietes by thick adhesions, particularly at the base and superior lobe posteriorly, it being necessary in the latter situation to use the knife to separate it. The lung was infiltrated with tubercular deposition, the superior lobe more especially, which was almost solidified; on cutting through the adhesion a vomica was discovered perforating the pleura posteriorly, having for its external wall the thoracic parietes, a very dense layer of false membrane being interposed; the cavity was the size of a small apple.

The liver was small, but presented nothing of a cirrhosed appearance; it was of a dark-greenish colour; the kidneys were healthy; on examining the uterus and its appendages, two cicatrices were observed on the right ovary, the uterus was dilated, capable of holding from two to three fluid ounces; its walls were thin and flaccid; the cervix uteri was elongated and projected into the vagina; the labia were enlarged and flabby.

The perforation of the left lung occurred in rather an unusual situation, the accident more commonly taking place at the inferior part of the superior lobe, near the angle of the third rib, and beneath the reflection of the false membrane, by which that lobe is generally covered; the membrane may only partially cover the opening, as it were, in a valvular manner, thereby greatly increasing the constitutional suffering, but in some degree prolonging life. The influence that the situation of a tubercular abscess exerts, as regards immunity from fatal perforation, is also illustrated; for instance, the cavity in the superior lobe of the right lung was larger, and apparently of longer standing than that in the central lobe of the left; the limited mobility of the organ, however, in the former situation afforded a greater facility for firm and strong adhesions to be formed, and consequent prevention of rupture taking place, than could possibly obtain at the left side, where mobility was increased in extent, the latter power being at a maximum at the base of the lung and diminishing from below upwards, and to this must partly be attributed the rarity of pneumothorax as compared with phthisis.

The points of pathological interest are:—

1. The absence of emaciation, and the enormous deposition of fat, co-existing with the extensive tubercular disease of the lung.

2. The double perforation of the pulmonary pleura, the position and size of that which caused the fatal termination, coupled with the comparative amount of the thoracic symptoms, confirming the pathological law, that in pneumothorax the constitutional suffering is inversely proportional to the lesion, that is, dependent on the size and form of the perforation, whether small and valvular, or large and free, as occurred in this instance.

3. The extreme degree of fatty degeneration of the structure of the heart; the proportionately large size of the organ with an adherent pericardium. The degeneration of the other structures we must regard as the result of the intemperate habits of the woman, who was a prostitute. Patients, however, sometimes present themselves, who with cavities in their lungs, have grown fat under the use of large quantities of cod-liver oil, which medicine this woman used for several months, the disease being for a time arrested.

FEBRUARY 25, 1857.

DR. FINN, PRESIDENT, in the Chair.

DR. S. HENRY HOBART exhibited a large tumour, somewhat ovoid in shape, and irregularly lobulated on the surface, which he and his friend, Dr. Cremen, had removed from the body of Mrs. K.; it had attached to it the uterus and bladder; the mass weighed eighteen and a half pounds in all, measured twelve inches in a vertical direction, ten inches from side to side, and about six inches from before backwards. The uterus appeared to be rather smaller than natural; it and the Fallopian tubes and ovaries lay on the anterior and superior surface of the tumour; these appendages were perfectly healthy, but, together with the uterus, were tightly bound down to the tumour, being covered only on the anterior surface with peritoneum; the bladder also lay on the anterior surface of the tumour, but was on a much lower level than the uterus. Dr. H. Hobart stated that, on laying open the abdomen, the entire mass was seen lying on the posterior wall of the abdominal cavity behind all the viscera; it was covered for about two-thirds of its surface anteriorly and laterally with peritoneum, inclined rather to the left side, extending upwards as high as the xiphoid cartilage, and downwards to the pelvis, the greater portion of which cavity was occupied by a process of the tumour. Two deep sulci marked it on the lateral aspects; these extended from below and in front upwards and backwards, and were found to lodge the ureters which entered the bladder on the anterior inferior aspect of the mass; indeed, these organs appeared to suspend the tumour as if in a sling. The portions of the ureters which were imbedded in the tumour were of their natural size, but their renal extremities were dilated to the size of the jejunum, for which intestine they were at first sight mistaken. The pelvis of the left kidney was ruptured by a slight degree of tension, and nearly a pint of urinous fluid escaped.

On slitting up the anterior wall of the vagina, a marked constriction was observed, about six inches above the external orifice; the edges of this were hardened, so that it might give very much the feel of an os uteri on examination by the finger during life, immediately above which, or even protruding through it, was a pyriform tumour, with its apex downwards, and extending for about four inches higher up, being attached to the posterior wall of the upper portion of the vagina; and above the base of this was the os uteri itself, so that the entire length of the vagina was about ten inches. The tumour could, by slight dissection, be separated from the vagina, and appeared intimately connected only with the os uteri, and, when cut into, resembled very closely in appearance a carcinomatous tumour of the breast. The cavity of the uterus contained three nipple-shaped projections, apparently in different stages of development, one resembling a polypus, being only attached by a slight neck; another being nearly globular, but more extensively attached; and the third being little more than a hemispherical projection; the structure of the uterus was also degenerated, and contained fibrous masses, which protruded more or less into its cavity. The main tumour was closely united to the posterior surface of the cervix uteri, but was easily separated from all other structures. Dr. H. Hobart stated, that it had no firm adhesion to the wall of the abdomen, being merely retained in its position by the peritoneum being stretched over it, and by loose areolar tissue. On making a section through its entire length it presented in several parts a firm, almost cartilaginous structure, appearing to the naked eye strongly to resemble a cancerous mass, but its non-adherence to neighbouring structures strongly indicated its benign nature, and examination under the microscope proved it to consist solely of fibro-cellular tissue. Dr. H. Hobart was of opinion that this growth originated in a fibrous tumour in the substance of the cervix uteri, which, instead of protruding into the cavity like the three small tumours above described, escaped posteriorly into the recto-vaginal space, and, being here abundantly supplied with blood, was enabled to attain this enormous size.

Dr. Cremen exhibited two specimens of heart disease. One was taken from the body of a man, aged fifty years, who dropped dead on the road, going to his work. The organ was enlarged considerably, and presented disease both of the mitral and aortic valves, which seemed to be of long standing; the former was thickened, and studded with large warty tubercles, freely permitting regurgitation; the latter were contracted, and contained ossific spiculæ on their inferior surface. The aortic orifice was much contracted, the body was slightly anasarcous, and had an anemic appearance: the man had been daily at hard work.

The second specimen was illustrative of dilatation of all the cavities, more especially those of the right side, with slight hypertrophy of the left side. The endocardium was opaque and thickened; the mitral valve was thickened and contracted. The subject from whom it was removed died from complicated lung disease. The specimens having accidentally come under his notice, Dr. Cremen presented them to the Society, but was unable to give the previous history of the persons from whom they were removed.

Case of Epilepsy. By Dr. W. H. Sandham.—Mrs. C., aged 26, five years married, without children; fresh, florid complexion, animated disposition, used to complain of what she called flushes, previous to marriage, which became aggravated afterwards, so that she would suddenly stiffen in every muscle, and become unconscious for about half a minute. A couple of months after marriage I prescribed for her aperients and the cold shower-bath. Shortly after she had, at night, a regular fit, which was concealed from me. In the month of May last her fits, at night especially, became frequent and dreadfully severe, so much so, that she would fill her lap with foam. At this time a lady who has some secret remedy for epilepsy gave her three doses of the nostrum, which kept her in a state of constant perspiration, and from thence she was without a fit, and gained flesh and spirits, until one morning in January, being a period of eight months, when she fell at her dressing-table in a severe fit. On this day I was at once sent for, and found her in bed, still foolish, her shoulder much hurt by the fall. As her senses returned, and she became sensible of what had occurred, she became distressed at the idea of relapsing into her former state. I applied cold to the head, a blister to the nape of the neck, and ordered for her a brisk enema; towards evening she had another fit, and on Friday evening, the conjunctivæ being much suffused, I applied six leeches to the temples; she had seven fits in the course of the night and next day; on Sunday she was up, but had eleven fits that night. I now met Dr. Townsend in consultation, when our prognosis was most unfavourable; she was ordered a pill of calomel and James' powder, and a plain enema in the morning.

Jan. 13th. She passed her fæces and urine involuntarily; knew no one, and a sensible answer could not be obtained; the pulse all through ranged about 90, without any irregularity. Infusion of valerian was ordered.

14th. Prognosis still more unfavourable; many fits through the night. I applied a blister, reaching from the occiput to the coccyx; gave her calomel, quina, and tartarized antimony every four hours, after first bringing away, by means of a turpentine enema, some hard scybalous matter.

15th. Twelve fits last night.

16th. Twelve fits last night; seven through the day. Continued the pills night and morning, with a pill of quina, iron, and aloes three times a day.

17th. Five attacks last night; no sleep whatever; an enema acted well, bringing away more broken-up fæces; repeated in the evening, with similar effect; the mercurial and tonic treatment was continued.

18th. No actual fit since 6½ A.M. yesterday, but great restlessness, tossing and throwing about of the legs and arms, and she was perfectly foolish; pulse 110; pupils contracted; eyes suffused; no evidence of salivation. The injection brought away a great quantity of thick, tarry, broken-up matter.

19th. All the symptoms aggravated; perfectly unconscious; everything passing involuntarily; next to impossible to get her to swallow medicine. Three persons had to hold her in bed during this day and night, on account of unceasing tetanic spasms; she would lie arched backwards and forwards; incessant chatterings, not one word of which was intelligible; eyes bloodshot, pupils contracted to the utmost; teeth dry and sordid; tongue parched and black; pulse 120 to 130; menstruated very slightly to-day. I applied six leeches to the inside of her thighs, and at 1½ P.M. commenced to give her, every hour, a tablespoonful of a mixture containing tartar emetic and laudanum. This was continued all day. At night I ordered a bladder of ice for her pillow, and the mixture to be continued. She grew gradually calm, and at 2 P.M. fell into a tranquil sleep, which lasted until 5 P.M. next day.

20th. Pulse gradually abated during the repose, and, one hour before she awoke, was steady, regular, and 90. She awoke apparently recognising every one. Skin cool, and face, which had hitherto a bloated appearance, pale. I gave her a soap enema, which acted fully, and again placed her head on the ice pillow. 10 P.M. She slept calmly until now; pulse 90; still more conscious, yet not an answer could be elicited.

21st. Went on calmly up to 12½ P.M., when appearing to be fidgetty, the sedative mixture was again repeated every hour. She became calm under its use, and went off into a sound, tranquil sleep at 4 P.M., which lasted until 10 A.M., when she took some nourishment with relish. Pulse 90, soft, and regular; heat of skin natural; eyes good. 10 P.M. Has had a good day; took some beef-tea and arrow-root, with a little wine. Soap enema acted well; omit all but the tonic pills.

22nd, 10 A. M. Had a quiet, tranquil night, without her anodyne mixture. More sensible; pulse 100; answers some questions; no approach to anything like a fit. 10 P. M. She took her nourishment all day well; asked for the vessel, and was conscious of having used it; spoke some rational words; tonic pills to be continued.

23rd, 10 A. M. Good night; bowels thrice affected; pulse 100; ptyalism now evident. 10 A. M. Perfectly collected and calm; pulse 100; pills to be continued.

24th, 10 P. M. Very tranquil night, perfectly conscious, and capable of conversing freely; ptyalism still more evident; bowels moved thrice; pulse 100. To have more nourishment.

On the 26th she was ordered a nitro-muriatic acid mixture, with an occasional oil-draught.

On the 28th she was allowed to drive out, from which date she rapidly recovered completely. Every remedy used in this case, the extensive counter-irritation along the spine, topical leeching, ptyalism, repeated powerful enemas of turpentine, assafœtida, and soap, &c., did not appear to check the progress of the disease in the least, until the tartar emetic and laudanum were given, and each additional dose had some apparent soothing effect; but from the moment sleep was established, recovery was rapid and satisfactory. The powerful and decided effect of this combination in so severe a case of a disease always obstinate, and generally incurable, has induced me to place it on record.

MARCH 11, 1857.

DR. CORBETT, VICE-PRESIDENT, in the Chair.

Violent and repeated Hematemesis; Cirrhosis of Liver; Slaty Discoloration of Stomach, with Mamillation.—DR. POPHAM exhibited the stomach and liver of a patient who died in the North Infirmary, from repeated attacks of gastric hemorrhage. The patient, a female of about thirty years of age, applied for relief from intense abdominal pain, which obliged her to bend forward and keep her hands constantly applied over the part. She was a workwoman in a feather-loft, and her habits were dissipated. On examination, great tenderness was felt all over the peritoneal surface, with tension; she had also thirst, dry skin, and much fever, with an irritable condition of the stomach. Her appearance was sallow, with œdema under the eyelids and about the ankles. She was freely leeched for the peritoneal inflammation, afterwards blistered, and took a few doses of calomel and opium, with the effect of removing the pain and the results of the inflammation. The abdomen became slack, her appetite returned, and she appeared convalescent. Some of her friends, however, brought her improper food, to celebrate her recovery, and on the day she was about to leave the hospital she was seized with vomiting of green matter, which, however, yielded to the treatment adopted. A few nights after this she was suddenly awakened by a gush of blood in her mouth, and the hemorrhage continued to recur until she had lost several pints of blood. Various astringents were used, of which gallic acid appeared the most successful; but the vomiting of blood returned on four several occasions, until it proved eventually fatal. She had no jaundice, nor any ascites; the cutaneous veins of the abdomen were not varicose; the sallowness of her aspect was not so striking as to attract notice, and she did not appear to have lost much flesh; the urine was in usual quantity, and free from albumen.

On examination after death, the stomach was found full of blood. On washing it, the mucous membrane was seen very vascular, but no abrasion could be discovered; in several parts spots of slaty discoloration were found, and near the pylorus the surface was thrown up into that warty form to which the name of mamillation has been given. The liver was small and pale, about 7 inches long by 4 wide, the whole surface nodulated, and giving the appearance of multitudes of yellow peas firmly adhering together; on cutting it, the tissue was tough and firm; the gall-bladder was empty.

Remarks.—In the preceding case, the only symptom that threw light upon her ailment was the hematemesis, though the degree of cirrhosis was extreme. The gums were spongy, but there were no discharges of blood except from the stomach, and no purpuric spots on the skin. After the peritoneal symptoms were relieved she suffered no further pain worth notice. The intellect was but little affected.

MARCH 17, 1856.

DR. FINN, PRESIDENT, in the Chair.

Case of Partial Cicatrization of a Tubercular Cavity.—PROFESSOR O'CONNOR exhibited a portion of the left lung, containing a cavity, the walls of which were perfectly smooth, and in which the reparative process leading to cicatrization had taken place. In other parts of the same lung were cavities of the ordinary character, of more recent formation. He related the symptoms of the case as follows:—

"This specimen of diseased lung was taken from a boy aged about 10 at the period of death. He was admitted into the hospital of the workhouse about two years previously, expectorating large quantities of purulent matter mixed with a little blood. On examining the chest there were manifest signs of a cavity under the right clavicle, namely, gargouillement, cavernous respiration, and dulness on percussion. There were also constitutional symptoms of phthisis, emaciation, quick pulse, diurnal chills, and night sweats. When the more urgent symptoms subsided, I put him on the use of cod-liver oil, which, after a short time, he bore so well, that he was able to take a tablespoonful three times a day. On this treatment all the constitutional symptoms of phthisis disappeared; he became fat and robust-looking, so that he obtained from the other children in hospital the soubriquet of the 'oil-cake.' The gargouillement ceased to be heard, and in its place were found pectoriloquy and cavernous respiration. The situation and extent of the cavity were very clearly defined, and from month to month its diminution could be readily perceived. On two occasions he expectorated blood freely, but rallied quickly after each attack. In this state he continued nearly two years, when he was suddenly seized with pain of the affected side below the situation of the cavity; and on examination the upper half of the lung was found to be solidified, bronchophony and bronchial respiration being heard over it, and complete dulness on percussion; no vesicular respiration was heard, nor any respiratory murmur, except a creaking sound on very forced inspiration.

"On examining the patient in this state, it was very interesting to hear the two sounds of pure bronchophony and pure pectoriloquy in such close proximity to each other; and the almost imperceptible difference between them, scarcely ascertainable except from a previous knowledge of the case, showed the correctness of the opinion of some modern stethoscopists, that these two sounds, representing such different states of parts, may readily be mistaken for each other. Shortly after, cavities began to form in the solidified lung, and the child sank rapidly, with the symptoms of acute phthisis."

Professor O'Connor then dwelt on the difficulty of distinguishing by physical examination a lung solidified by pneumonia, and one solidified by tubercular infiltration. He had under his care at the present moment a young man, the upper half of whose left lung was in a state of complete solidification for the last five months, with perfect bronchophony and bronchial respiration. During the whole of this period there was not the least sign of softening in the lung. Any one seeing the case for the first time, and trusting alone to a physical examination of the chest, must come to the conclusion that the disease was pneumonic solidification.

On Cysts of the Ovary.

THE following is a summary, deduced in the form of propositions by M. Saurel, from the observations of the several speakers who have taken part in the discussion at the Academy of Medicine, which has so long agitated the profession in France:—

1. Cysts of the ovary constitute a most serious disease, and one which has a strong tendency to a fatal termination (Cazeaux and Huguier).

2. These cysts have a variable duration, which is usually four (Cazeaux); six, ten, or twelve years (Velpeau).

3. It is an error to suppose that, in the majority of cases, life is

prolonged to an advanced age: the younger the patient is, the more speedily does she sink under the disease (Huguier).

4. There are ovarian dropsies which are absolutely incurable, and which have neither curative nor palliative treatment; these are the areolar cysts, the vesicular cysts, and the multilocular cysts, with numerous non-communicating cells (Cruveilhier).

5. In certain cases ovarian cysts may get well spontaneously, or may be removed by certain therapeutic agents (Velpeau).

6. Their cure may take place as a result of rupture, though this accident most frequently proves fatal (Velpeau).

7. The so-called palliative puncture of ovarian cysts is not a dangerous operation. It may, in certain cases, which are, however, very exceptional, lead to permanent cure; but it is attended with the serious inconvenience of producing or hastening exhaustion of the system, by subtracting a considerable quantity of fluid (Velpeau).

8. Puncture, followed by the injection of an ioduretted solution is, in the present state of our knowledge, the most certain and least dangerous means of curing this hitherto incurable disease (Cazeaux).

9. Immovable canulas and sounds ought to be banished from the treatment of ovarian cysts, except under very rare circumstances; their employment being an almost constant cause of suppuration.

10. The proceeding to which it is in almost every case advisable to have recourse is puncture, followed by ioduretted injection, with occlusion of the opening.

11. Unilocular cysts, without organic alteration of their walls, containing a serous, sero-sanguineous, or albuminous fluid; cysts which have originated in an extra-uterine pregnancy; and purulent cysts, are those most amenable to treatment (Huguier).

12. The discussion having proved that puncture followed by ioduretted injection is not more dangerous than simple puncture, it will be right to operate early, in order to have the best possible chance of success (Velpeau).

13. The proper time to operate is when the cyst, not having yet acquired a large size, is beginning to cause suffering to the patient, or to exercise an injurious reaction upon the functions.

14. The great danger in the curative, as well as in the palliative, treatment is purulent and gangrenous inflammation of the cyst. The choice of the proceeding to be adopted should be directed by this indication (Cruveilhier).

15. Extirpation of the ovaries is a fearful operation, and ought to be proscribed, even were the cures which have been announced real (Velpeau).—*Revue Thérapeutique du Midi*, February 15, 1857, p. 72.

On Humanized and Original Lymph of Cow-Pock, used in the Imperial and Royal Vaccine Institution in Vienna. A Report laid before the Society of Physicians on the 15th October, 1856. By Dr. FRIEDINGER, House Surgeon to the Foundling Hospital.

THE present supply of lymph at the Vaccine Institution dates partly from the introduction of cow-pock inoculation into Austria, but is also partly derived from original cases of cow-pock discovered two months ago at the sugar factory at Absdorf, and officially examined and approved of.

The older lymph, in use since the introduction of vaccination, was obtained from London, through the interference of Dr. de Carro[a], meritoriously known in connexion with cow-pock inoculation. It was first employed by law in the year 1801. De Carro, at present at Carlsbad, had at that time acquired great distinction by the introduction of vaccination not only into Austria, but throughout all Europe: and even into Asia. The first vaccine matter was sent to him on threads in a letter, on the 20th of March, 1799, by Dr. Pearson, the friend of Jenner, and the first President of the Cow-pock Institution established in London, on the 2nd December, 1799 (see Portenschlag's Translation of De Carro, pp. 13 and 68). A month later, on the 29th of April, 1799, State Councillor Dr. Ferro, at that time Commissioner of Health (Sanitäts-Referent), made the first experiment with the lymph (see Dr. Ferro, "Ueber den Nutzen der Kuhpockenimpfung," 1802, page 28). The vaccine matter was sent to a physician staying in Vienna[b]. Ferro inoculated his youngest three children with it. He boasted in his work (p. 27) that he was the first in Vienna who had successfully made experiments in vaccination. The youngest of his children, a girl aged 19 months, supplied matter, on the 10th of May, 1799, for the vaccination of Dr. de Carro's son, aged 3 years. Ferro himself operated (see Ferro, p. 32). From this boy, named Carl, De Carro on the 20th May vaccinated his second son Peter, and from the latter he transferred the infection to his two other sons. De Carro, accordingly, has the merit of having procured the first cow-pock lymph from London; and to him is also due its first introduction into the Imperial and

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[a] To the honour of truth be it said, that De Carro's merits in the introduction and extension of vaccination in Europe were recognised not only by Austria, but also by Greece, in the bestowal of orders of knighthood. Valuable tokens were also sent him in acknowledgment by the English Governor of the East Indies, and by Dr. Jenner himself, who called Dr. de Carro the first promoter of vaccination in Europe out of England.

[b] According to De Ferro, page 28, this lymph was sent by Jenner himself. From De Carro's statements, pages 68 and 13, it is certain that the physician staying in Vienna was none other than the Genevese physician, De Carro. De Carro had been, since 1796, a member of the faculty in Vienna. It is also certain that not Jenner, but Pearson, had sent the first vaccine matter from London. All the vaccine obtained from London was humanized matter.

Royal General Hospital. But the merit of its first employment belongs to Dr. Ferro alone.

De Carro obtained vaccine matter a second time from London. On this occasion it was sent, on the 1st December, 1799, by Jenner himself. Of the use made of it, nothing is known (Portenschlag's Translation of De Carro, p. 118).

Previously to the general experiment in the hospital, De Carro sent from Vienna, in the summer of 1800, humanized vaccine lymph to Constantinople. Mrs. Nisbet, mother-in-law of Lord Elgin, the English Ambassador at the latter city, was the bearer of it. A letter written by Lord Elgin from Constantinople, on the 23rd of December, 1800, bore testimony to its having taken well. Vaccination spread from Vienna to Constantinople, just as nearly a century previously the inoculation of small-pox had extended from Constantinople into Europe. Ferro also obtained vaccine matter on threads from London. Dr. Woodville, Physician to the Institution in London, had sent it on the 29th January, 1801. This lymph was intended for an official experiment in the General Hospital. But as the trial was delayed, and as it was apprehended that the lymph might thereby become old and uncertain in its action, it was otherwise employed, and was successfully disseminated through Austria (see Ferro, p. 40).

In consequence of an order of the Court, bearing date the 16th of July, 1801, and of a decree of the Government, of the 1st of August in the same year, a trial of Jenner's discovery was instituted in the General Hospital. On the 31st of August, 1801, 26 children, of some years of age, were taken into wards 31 and 32, under the direction of Aulic Councillor Dr. Frank: 21 of the children were from the Foundling Hospital, and 4 from the Orphan House. The infection was taken from Joseph Dechrott, a boy of two and a half years of age, who had been vaccinated by De Carro eleven days previously. On the 1st of September all the children were vaccinated by Zeller v. Zellenberg, Surgeon-in-Chief, and Surgeon to the Emperor. Count Kufstein, Vice-President of the Government; Aulic Councillor Frank; Dr. Ferro, Councillor of the Government; Dr Werner, and all the principal physicians of the hospital, were present. Only 15 children were successfully vaccinated: of the remaining children, 5 were successfully vaccinated on the second and third repetitions of the operation; consequently, with 20, on the whole, the operation succeeded. On the 12th November, 1801,—that is, seventy-three days later,—the test inoculation was performed with lymph taken from small-pox pustules, likewise by Zeller, as it had been, in 1799, by Ferro and De Carro, on their own children, The test was applied to 15 children, and in none did the matter take effect. In accordance with P. Frank's Hospital Report to the Government, the Foundling Hospital was from this time selected as the most suitable place, on account of the greater number of children, for performing the operation of vaccination, and keeping up the supply of lymph. This laid the foundation of the Vaccine Institution. From that time to the present, the lymph has proved itself to be of as good quality as when it was first employed; but neither by me, nor by my predecessor, Dr. Zöhrer, was it found invariably to take well. This did not, however, prevent it taking better in the next series of patients. This difference is attributable to the undefinable variation in vaccine lymph in general, as well as to the undefinable difference in receptivity in the persons operated on. In inoculating sheep, too, the variola lymph, which is still invariably used, does not at all times take equally well.

From what has been stated, it is evident, that the Vaccine Institution was never under the necessity of adopting the use of original lymph; yet the old lymph was partially and frequently renewed from London, by Dr. Zöhrer. This always took place only with the cow-pock lymph of one series of patients, while a second series were vaccinated with the old lymph obtained from London. The one series was in the first story, the other in the second story, of the Foundling Hospital. A durable renewal of the old lymph, in the first story, was once accomplished by retro-vaccination, and once by the introduction of original lymph. Retro-vaccination was performed on a cow, on the 13th of April, 1842, at Bisamberg. The experiment was successful. Its transference to the human subject was likewise attended with success. This retro-vaccinated lymph continued to be used by Dr. Zöhrer, and also after his death. In this series of patients, the original lymph was obtained on the 21st June, 1850, from Breitensee; this, as well as the lymph from Bisamberg, was continued in use after Zöhrer's death. The original lymph from Breitensee did not at first take, on its immediate transference from the cow to a child: it first took through the medium of the scab of the original cow-pock, softened and fastened on the seat of incision; consequently, in the year 1850, there were three cow-pock lymphs in the General Vaccine Institution, namely:—

1. The old lymph from London, kept up in the second story of the Foundling Hospital.
2. The retro-vaccinated lymph from Bisamberg, and—
3. The original lymph from Breitensee, both in the first story.

But in the year 1853, vaccination in the first story was stopped. The lymphs from Bisamberg and Breitensee were lost. Lymph was obtained from external patients who had been vaccinated with the lymph of the Institution. The source of this new lymph could not be precisely ascertained.

When the duty of vaccinating was, shortly after, intrusted to me as Assistant House Surgeon, the lymph in the first story at times frequently failed. With the permission of the Board of Management, I transferred the reliable old lymph from the second series of patients in the second story to one series of patients in the first. From this time the vaccine in the first story ceased to fail. Transient causes sometimes led to the lymph in general not taking so well. They are mentioned in the Annual Reports of the Foundling Hospital for the years 1854 and 1855, but never was there a permanent loss of the properties of the lymph. Consequently, since 1853 but one lymph has been kept up in the Institution, that, namely, which was first employed by Dr. Ferro, and brought over from London by Dr. de Carro.

But since the establishment of the Vaccine Institution in 1801, original and retro-vaccinated cow-pock lymph has often been tried, in addition to the varieties just now mentioned. Most of these experiments failed, but even when they succeeded, the transmission of the lymph was, on account of various unfavourable circumstances, not found satisfactory. It was therefore not kept up. Several accidental illnesses of the patients were likewise unfavourable to the propagation of the lymph. Once it happened, before the introduction of the lymph from Bisamberg and Breitensee, that the pocks of all the patients in the first story degenerated into large vesicles, so that propagation of the infection was impossible. Dr. Zöhrer was consequently compelled to improve it again by means of the old lymph.

An experiment succeeded with original lymph which was sent, in the year 1842, on three bone lancets by the Imperial and Royal Agricultural Society. Only a single pock was obtained from six punctures. This pock differed in nothing from the older kind (Dr. Zöhrer, p. 35). The lymph was not propagated.

An experiment also succeeded with original lymph, sent in on bone lancets, by Dr. Schiffner, District Physician, on the 30th of November, 1843. Of four children vaccinated, one presented a single little pock. All the other children, with whom the operation failed, were subsequently vaccinated from this one pock, this time with complete success. This lymph was given up after some transmissions, because the results were frequently found to be uncertain, and the retro-vaccinated lymph from Bisamberg was adopted in its stead. Since the year 1853 original lymph was twice sent in on bone lancets, but the experiments failed both on the human subject and on cows. The lymph taken from the original pocks observed in the year 1855, in the suburb of Wieden, also failed. Corresponding experiments were always tried with original lymph, in the chief Cow-pock Institution, though seldom with corresponding results, as appears from Zöhrer's book.

The success of the retro-vaccinated lymph has been as uncertain as that of the original. The retro-vaccinated lymph from Bisamberg must, however, be excepted, as well as that once obtained from Florian in Styria.

An experiment of direct transmission was performed in 1851 in the Imperial and Royal Veterinary Institute in Vienna, in presence of several professional men. A second similar trial was made in 1855 at the Windmill. Both experiments failed. In every instance the infection took with cows, but in none did it succeed in the human subject. Dr. Zöhrer obtained similar results with retro-vaccinated lymph sent in from Florian in Styria. It did not take. (See Zöhrer, p. 74.) The Institute was always equally active in testing the retro-vaccinated lymph. It was not until quite recently that we again succeeded in introducing into the Institute original vaccine lymph from Austria, in addition to the old infection from London. Original cow-pock was, in the month of July, observed on four cows at the Prince of Salm's sugar factory at Absdorf, in the magisterial district of Zistersdorf, and was officially tested. Dr. Komoraus, of Feldsperg, District Physician, sent ten double bone lancets, impregnated with original lymph, to the Government. By a decree of the latter, the lancets were handed over on the 25th July to the Board of Management of the Foundling Hospital, to be employed in that Institution. On the 27th July, three, and subsequently two, infants at the breast were vaccinated with this dry lymph. The lymph was, in some cases, softened with cold water, in others with saliva. On each child six punctures were made. Only on one well-nourished infant were two pocks produced. In the other children the vaccination produced no result. A repetition of the vaccination, in some cases with the old lymph of the Institution, in others with new humanized lymph, was, however, completely successful. The pocks of the original lymph were not essentially different from those of the old. They were only protracted in their course, not attaining their full development until the tenth day. Yet so early as on the fifth day both pocks were visible, in the form of numerous, grouped, little vesicles, surrounded with a base. On the 9th the pocks were encircled with a dark red areola, to the extent of a copper groschen. On the tenth day the formation of a scab began, which ran the usual course, and was complete in the third week. The fever was moderate, and equal to that of the other children vaccinated.

This original lymph was propagated in the second story of the Foundling Hospital in a special series of patients, at present the 13th. But the old lymph from London continued in a second series in the first story.

By the experience obtained by the introduction of the original vaccine lymph, it was proved that the failure of the original lymph in some (on this occasion in four children) is no proof of the spurious quality of the lymph, and that consequently no conclusion can in general be drawn from a negative result. On the other hand it was shown, that the original lymph, uncertain in its action when first transferred, does not acquire certainty until it has been once successfully propagated, a proposition repeatedly confirmed by Dr. Zöhrer's experience, and to be deduced from an essay by Dr. Unger, of Florian in Styria. In this essay, bearing date September 1st, 1846, and containing the theory of the regeneration of cow-pock lymph, Dr. Unger himself shows that the retro-vaccinated lymph, as it has hitherto been obtained in the Institution for Retro-vaccination under his care, founded by his Imperial Highness the Archduke John, is weakened in the system of the cow in its infecting power and reaction, but is, in his opinion, purified from some adhering morbific matters, and supplied with increased protective power. To enter on the refutation of the gratuitous and undemonstrable assumptions contained in these second and third statements, does not fall within the province of this paper; and on this subject I refer to Barthez and Rilliet's most recent work on Vaccine, to those of Dr. Eimer and Dr. Zöhrer, as well as to my own experiments on the vaccination of syphilitic individuals, published in the year 1855, in the Journal of the Imperial and Royal Society of Physicians in Vienna.

People have unjustly ascribed the injurious consequences of vaccination, such as have also been observed in the course of variola vera, solely to the bad quality of the vaccine lymph, forgetting that in the cow-pock we have nothing else than a small-pox contagion, though a small-pox contagion of the mildest kind. We have in the present day, in general, forgotten the tenor of the epidemics of small-pox, and are therefore frequently inclined to doubt the benefit of cow-pock inoculation, instead of duly valuing it. Even if the cowpock be a variolous disease, which is designedly communicated to man, it is not to be compared with that dangerous disease which at the time of the introduction of vaccination was almost unavoidable, and which is by the latter operation only greatly diminished in its frequency and danger.—*Wochenblatt der Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, November 10, 1856, p. 754.

On the Therapeutic Employment of the Pyrophosphate of Iron.

By M. E. ROBIQUET[a].

THE number of ferruginous preparations employed in medicine is already considerable, and their beneficial action on the system no longer requires proof. I have, however, thought that there was still something to be done in reference to them, and I am now about to lay before the Academy the trials I have made.

My experiments have been upon the pyrophosphate of iron. Since Mr. Graham made known the singular transformations produced by heat in phosphoric acid, chemists have carefully studied the saline combinations into which the acid, molecularly modified, is capable of entering. The most interesting of these salts are those formed by simple igneous fusion, and, therefore, called pyrophosphates, and for this reason, that the pyrophosphoric acid corresponds to two equivalents of base. Industry has already derived great advantage from the property possessed by pyrophosphoric acid, of combining with soda, and with gold or silver. In medicine the pyrophosphate of iron has often been tried, and this might be expected, for oxide of iron undoubtedly reacts on the functions of the blood, and the elements of pyrophosphoric acid are found in the bones; but it has soon been given up, on account of its liability to change, and of the great quantity of pyrophosphate of soda necessary to retain it in solution in water. It struck me that these inconveniences might be easily avoided without depriving the ferruginous salt of any of its essential properties.

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[a] Read before the Imperial Academy of Medicine of France, at their sitting of the 10th of February, 1857.

In medicine the essential characters of a good preparation of iron are, that it shall readily dissolve in the fluids of the stomach, without impairing their digestive functions; that it shall be completely assimilated in the system; and that it shall not act as an astringent. The pyrophosphate of iron possesses all these properties; its resistance to solvents is the sole difficulty which remains to be overcome, to entitle it to the first rank among the preparations of iron.

In studying the molecular constitution of this remarkable salt, it is easy to see that it belongs to the class of bodies endowed with the character of polymorphism. Like sulphur, phosphorus, arsenious acid, and many other polymorphous substances, pyrophosphate of iron will therefore present great differences in its chemical properties, according to the process adopted in its preparation, and the temperature at which it has been obtained. By precipitating a solution of persulphate of iron with one of pyrophosphate of soda, taking care to operate at a temperature below 59° F., we obtain a gelatinous precipitate, which is nothing else than pyrophosphate of iron ($Fe_2\,O_3\,3\,Ph\,O_5$), dissolving with the greatest facility in a solution of pyrophosphate of soda. If the ferruginous salt were obtained at a temperature above that just mentioned, and, *à fortiori*, at a boiling heat, a considerable quantity of pyrophosphate of soda would be required, and still we should obtain only an unstable solution acquiring a black colour, and having an insupportable taste. In fact, whatever precaution we take, not less than four parts of pyrophosphate of soda are required to dissolve sixteen of the gelatinous ferruginous precipitate, representing three parts of the salt dried at 212°. When the solution is prepared in the cold, it keeps for some time without change, and might be converted into a syrup which would keep tolerably well in close vessels for one or two months. However, such a mixture contains too large a proportion of pyrophosphate of soda, which gives it a disagreeable saline taste, and does not prevent it, after a longer or shorter interval, from blackening on exposure to the air, and acquiring a more and more decided metallic taste. It was therefore necessary to seek for another solvent. That which I have found to succeed best is the citrate of ammonia, a salt which has the double advantage of being capable of employment in very small quantity, and of chemically concealing iron from reagents.

The solution of pyrophosphate of iron in a citro-ammoniacal liquor keeps for whole months without undergoing any change, and yields a syrup free from the intolerable taste of ferruginous compounds. Potash, ammonia, and the alkaline carbonates, do not give, with pyrophosphate of iron so dissolved, the reaction peculiar to the salts of iron.

MM. Dumas, Laurent, and Gerhardt, in their valuable researches on the theory of substitution, have shown that it is possible, in a number of organic compounds, to substitute iodine, bromine, or chlorine, for hydrogen, without disturbing the molecular equilibrium, or the chemical reactions of the fundamental compound. Thus in chloruretted alcohol or chloral, nitrate of silver produces no turbidity, because the chlorine of the chloral behaves, not as the chlorine of hydrochloric acid, or of a metallic chloride, but as the hydrogen of which it has taken the place. Now, destroy the chloral, either by combustion by nitric acid, or by any other energetic oxidizer, and you will re-discover the chlorine with all its characteristic reactions. In like manner, in the salt of which I am treating, the iron is chemically concealed; its presence is no longer manifested by the most sensitive reagents; potash and ammonia no longer precipitate it as an oxide; and its properties are so masked, that it is necessary completely to break up its molecule in order to be able to estimate the iron, or to discover its reactions.

If I enter a little at length into this subject, it is because I am persuaded that therapeutics will one day derive the greatest advantage from medicines, the active element of which is chemically concealed. Such compounds are, in fact, very slowly disaggregated in the process of digestion, and the system, absorbing them atom by atom will conceal them integrally.

The process of solution being once found, nothing is easier than to transform the pyrophosphate of iron into comfits, syrup, or lozenges; the latent state in which it exists in this new salt enables us to mix it with wine of bark, and to obtain from it a powerful tonic, without having to fear the blackish discoloration and inky taste which are always produced when a salt of iron is brought into contact with fluids more or less highly charged with tannin.

In whatever mode the citro-ammoniacal pyrophosphate of iron be administered, its taste is absolutely none, and patients not only bear it readily, but feel the best effects from its use. I have seen it particularly useful in well-marked cases of anemia, chlorosis, and chronic urethritis.

I will not, however, allow myself to be drawn into giving the details of the observations I have had the opportunity of making, lest I should be suspected of partiality; but I may be permitted to say, that I await with confidence the result of the trials to which the Academy will judge it advisable to submit the preparation I have had the honour to bring under their notice.

To recapitulate, the pyrophosphate of iron, chemically considered, is a polymorphous salt, in which the metallic atom is concealed from reagents; it contains by weight 21·11 per cent. of iron. In a therapeutic point of view the facility with which it is assimilated by the system, the absence of all styptic taste, its perfect solubility in water, the influence, finally, which it exercises on the composition of the bones and the functions of the blood, entitle it to the first rank among ferruginous compounds.

Formulæ. *Syrup of Iron.*—Pyrophosphate of iron, two and a half drachms; simple syrup, twenty-nine ounces; syrup of orange flowers, three ounces; make a syrup by simple solution, and colour with a sufficient quantity of tincture of cochineal or alkanet. Each drachm of the syrup contains about six-tenths of a grain, and a tablespoonful about three grains, of the salt of iron.

Ferruginous Comfits.—Pyrophosphate of iron, one ounce and five drachms; divide into 500 comfits, each of which shall contain a grain and a half of the salt.

Ferruginous Wine of Bark.—Pyrophosphate of iron, two and a half drachms; extract of pale bark, seventy-seven grains; white wine, thirty-two ounces; to be made *secundum artem.*—*Journal des Connaissances Médicales et Pharmaceutiques*, February 20, 1857, p. 185.

On Quarantine in Cholera. By Baron Gustaf von Düben.

The author draws from a work on the results of Swedish experience, in reference to quarantines and blockades in cholera, the following conclusions:—

1. The reports of the origin and spread of cholera in Sweden, in 1850, as they are given in Dr. Berg's book, are, to a certain extent, partial, in consequence of the previous assumption of the doctrine of contagion.

2. The proofs contained therein of the diffusion of cholera by contagion are, notwithstanding this assumption, imperfect and without weight.

3. A review of them, compared with the vastly preponderating number of proofs of the opposite, demonstrates that cholera has not exhibited itself in Sweden as a contagious, but as a miasmatic disease.

4. Quarantines have not secured Sweden from cholera.

5. They have not been, nor could they be, so regulated as to correspond to the simplest, much less to the full, requirements of science and humanity,

6. The blockades within the country have been incomplete and ill-conceived.

7. Where they existed, and cholera did not occur, their character took away all the support sought to be derived from this exemption in proof of their protecting power.

8. They have not afforded security against cholera.

9. Epidemics in general adhere to certain localities remarkable for the want or imperfection of sanitary conditions; cholera follows precisely the same law.

10. Epidemics in general are mitigated or prevented by remov-

ing this want, and perfecting these conditions. The same is true of cholera.

11. The only efficacious means, applicable on a large scale, against cholera (and all epidemics) is the adoption of measures calculated to preserve the general health.

12. Quarantines and blockades are injurious; because they keep up and disseminate a false idea of the existence of contagion:—

Because they, in an essential degree, lead to the abrogation of certain social and religious precepts, to ill-will, strife, and crime, when an epidemic breaks out.

Because they give rise to the neglect of judicious measures.

Because they are attended with unnecessary direct expense.

Because they produce unnecessary and long-continued indirect expenses, through the restrictions which they impose on trade and industry.

Because they arrest productive labour, and oppress the poorer classes with artificial scarcity.

Because their maintenance redounds to the nation's shame.

From all these premises may be drawn the conclusion, that—

Quarantines and blockades against cholera are, according to Swedish experience, and as they are carried out in Sweden, whether they be regarded in a medical, moral, economic, or political point of view, both useless and injurious, and are, consequently, wholly condemnable.

Contributions to the Theory of Epiphytes. By Dr. Edward Koch, of Würzburg.

It was pardonable that investigators who had never succeeded in discovering fungi in mentagra should deny their occurrence or their pathognomonic signification in this disease; it is, on the other hand, surprising that the fungus in favus should at the present day be considered as an *accidental* product of albuminous transudations (Didot), and, accordingly, as unessential to that affection.

The general condition necessary to the growth of fungi on the human body is their transference from without to such parts as present the conditions essential to their development. Gudden has very well described the circumstances favourable to the growth of fungi on the integuments; but he has, it seems to me, omitted a very important element in the causation of the origin and spread of pityriasis versicolor, namely, morbidly increased secretion of the perspiration, coexisting with a neglected state of the skin. That this cause of the development of pityriasis is very active with respect to the fungi on which it depends, is evident, first of all, from its frequent occurrence in phthisical subjects convalescent from typhus, and, in general, in patients affected with permanently or temporarily increased cutaneous secretion, in whom, either from carelessness or from caution, bathing or washing of the skin is omitted.

Thus I remember some patients of this description who were covered literally from head to foot with scales of pityriasis, but in whom I, unfortunately, did not employ microscopic examination, and can therefore not answer for the existence of fungi in their cases, nor can I insist on the existence of the latter in *all* cases of pityriasis after typhus, as I have convinced myself of their presence in only five or six such convalescents. The parts of the body most liable to circumscribed pityriasis might be adduced as a further confirmation of this view. Thus, it is particularly apt to attack the trunk, which is much more easily and frequently the seat of increased perspiration, than the extremities; and if we examine more closely, we shall find that the parts most inclined to perspiration, from the neck down to between the scapulæ, the spaces above and beneath the clavicle, the axillæ, particularly the parts about their anterior portion, are most frequently and intensely attacked. In the latter situation, as well as between the breasts, I have very frequently observed it in women. I cannot give a general assent to Gudden's statement, that pityriasis versicolor in particular is of so very rare occurrence in women. This opinion may have arisen from the greater reluctance of women, for many reasons, to consult the practitioner for a few such spots, and also from the less chance of the accidental discovery in them, during medical examinations of other kinds, of the existence of such an affection, in consequence of their unwillingness, without absolute necessity, to expose the parts just mentioned But if the physician is more frequently compelled to make such examinations in an hospital for syphilitic or cutaneous affection in the female, he will very soon be convinced that pityriasis occurs perhaps as frequently in women as in men. In children, on the contrary, it is certainly very rare; in the latter, profuse perspiration occurs less frequently, and more attention is generally paid by adults to the cleanliness of their skin, than grown people are wont to bestow upon themselves. Gudden further quotes the case of a man who was in the habit of leaving his chest exposed, and in whom the middle part of it remained free from pityriasis, certainly only because it was less liable to profuse perspiration, and because the latter was immediately dried by the access of air,

In pityriasis, the fungi grow chiefly in the external horny layers of epidermis; in favus, on the contrary, they are developed in the hair follicles, where they increase to form great scabby, conglomerate masses, the so-called individual favi (Favus-Individuen). Leaving out of consideration that we have here to do with two different species of fungus, a strict separation of the two forms, as essentially distinct affections of the skin, is certainly justified even by the external microscopic phenomena. For the same reasons, as little can identity be maintained between favus and herpes tonsurans, or between pityriasis and the mentagraphyt described by Gruby.

Thus, in herpes tonsurans, the fungus is situated almost exclusively in the hairs, and in their fibrous substance; at least I was enabled, in almost all the hairs I examined, to establish the freedom of the medullary substance from the affection. In the fine, whitish scales of epidermis surrounding the diseased hairs, I have, on the closest examination, but very rarely found some few sporules, but never could discover such great masses as Hebra and Bärensprung mention. These small quantities of sporules must have been derived from the bursting and breaking of the hairs filled with them into the adjoining layers of epidermis. But even should Bärensprung's assumption be correct, that the growth of the fungi begins in the epidermis, and finds its way thence into the hairs, it is still in the hairs that the process, in this form, is to be considered as predominant and essential. If, on the other hand, in favus, hairs are found, here and there, containing fungi, this is certainly so rare as to be considered an incidental occurrence; while, in this case, the formation of the scabby fungous convolution around the hairs—whether isolated or confluent is indifferent—is to be considered as characteristic.

The arrangement of the fungi in the hair, in herpes tonsurans, I have, in general, found to be such as Malmsten and Bärensprung have described. They lie as garland-like, undivided strings of sporules between the fibres of the cortical substance, leaving the medullary portion intact. The hairs are broken off very short, so that, when pulled out, they are only a few lines long; they have a dirty-white colour, and are swollen, thicker than the unaffected hairs, and very brittle.

Both the upper and under (radical) extremities of these stumps of hairs are, in general, splintering and broom-like, and the strings of fungi extend from the middle portion out between the splinters of the two extremities, so that it is hard to determine whether the fungi grow out from the root, or whether—as Bärensprung considers to be possible—they grow, after the fracture of the hair, through the fractured end into the fibrous substance. I should be inclined to look upon the former as the more probable, namely, that the fungus is developed in the root-sheath, and that it penetrates thence into the upper part of the hair. The growing-in of the fungi from the top of the hair would indeed be proved, if Küchenmeister's statement were correct, viz., that, first of all, a round heap of sporules forms in the root of the hair. But I look upon this as impossible, since, in every diseased hair of the kind, the top breaks off in extraction; besides, it is more than improbable that a growth of fungi could arise in the centre of the root, without transference from without. Opposed to Bärensprung's view, that the fungus reaches the hair also through the upper fractured extremity, and grows thence downwards, is as yet the fact, that such hairs have never been found having their upper end filled with fungi, and their lower part still free therefrom; not to mention that, were such a process going on, the fungi should be found more abundantly in the epidermis than is really the case.

I have not as yet had an opportunity of observing the *Microsporon Audonini.* On the other hand, I have, in two cases of mentagra, succeeded in discovering the *Microsporon mentagraphytes*, and on both occasions as a dense layer of little round sporules situated between the roots of the hairs and their sheath, its limits superiorly coinciding exactly with those of the hair follicle. Fungoid filaments I have as yet not seen in this form of disease.

If we now consider once more the situation of the fungus in the four forms spoken of, viz., Pityriasis, Favus, *Herpes tonsurans*, and Mentagra, we find it to be in Pityriasis in the external layers of epidermis, leaving the hairs and their sheaths free; in favus in the hair follicle, leaving the lower parts of the root-sheaths always (Gudden), and the inner part of the hair most frequently, free; in *Herpes tonsurans*, in the fibrous substance of the hair, with but slight implication of the scales of epidermis surrounding the hair; in mentagra, in the inner root-sheath of the hair, leaving the hair, the hair follicle, and the surrounding epidermis free.

Did we now assume, that some of these forms of disease depend on the same species of fungus, which, however, is not the case, this constant difference of the tissue attacked should warn us to discriminate between the diseases in question. Gudden, on the other hand, correctly maintains that all varieties of favus are formed of one and the same species of fungus, and are only determined by the greater or less reaction of the cutis against the intruder, and, I might add, by the degree of growth of the latter. This is not true of favus alone; it is equally so of all the forms mentioned. It is accordingly a matter of indifference, with respect to determining the nature of the disease, whether we find the crusts of favus on a dry part of the skin or on one affected with eczema, or meet them bathed in pus, the favus crust is distinctive. It was certainly a useless and superfluous dispute which was carried on, whether *Herpes tonsurans* commences with eczematous or herpetic vesicles, with papulæ or pustules; the *Trichophyton tonsurans* in the hairs is the essential point, and according to the degree and duration of its growth and the sensibility of the skin in the part affected will the case be attended with simple exfoliation of the epidermis, the formation of smaller or lesser vesicles, pustules, or even abscess.

It is further equally self-evident, that, according to the different seat of lodgment of the fungus, the reaction of the skin in each form will in general vary. Thus we find in pityriasis, where it is superficially situated, for the most part no reaction of the skin, and a slight redness only when the process is very intense, or the skin tender. In favus, in which the fungus begins to grow in the hair follicle, a small yellow vesicle first forms around the latter, and soon dries; under the gradually increasing crust the cutis atrophies; if the scabs increase very much, or coalesce to form extensive crusts, the irritation excited is of course greater, and the more so, as washing is very much impeded, and consequently superficial suppuration easily takes place under the crusts, though in most cases without considerable swelling of the skin. Wholly isolated crusts of favus may, if the atrophy of the cutis is once accomplished, exist a long time without any reaction of the surrounding parts. Thus, I once found, on the lower part of the left thigh of a girl suffering from constitutional syphilis, two isolated scabs, of the size of a six-kreuzer[a] piece, of a dirty-yellow colour, round, and smooth on the surface. I at first thought they were the scabs of dried pustules, but they separated, and I was surprised not to see the least redness of the surrounding parts, and the patient asserted that she had them more than a year. They were convex inferiorly, and the corresponding cutis was atrophied. On their upper surface was a small, central, bowl-shaped depression, leading to a fine, little aperture, perforating the entire crust. Microscopic examination showed them to be crusts of favus. The patient stated that she never had favus on her head.

Now in mentagra, where the fungus penetrates to the deepest parts of the root-sheath, leaving the follicle free, we see the cutis first swell, producing node-like tumours, while a continuance of the affection gives rise to burrowing abscesses, with the subsequent formation of crusts. Thus I have, in one case, removed undermined crusts of the size of a half-florin piece, and from two to three lines in thickness, the numerous hair follicles projecting far, bathed in pus on their under surface. The nature and situation of the fungus are best studied on hair follicles removed in this manner.

Finally, I may state that in the last patient affected with favus, whom I had an opportunity of examining, invariably I found in all the scabs peculiar bodies of a light green colour, and for the most part of a regular round shape, about double the size of the sporule cells, and consisting of a membrane in general containing from one to four smaller granules, apparently of a darker shade of green. I do not remember to have seen these bodies mentioned in any description of favus, nor had I myself observed them in my earlier investigation of such scabs; consequently, I cannot pledge myself that they are a constant constituent of the scabs in favus. However, it struck me as remarkable that in this one patient I found them in tolerably large numbers mixed with the fungi, and especially where the filaments were most crowded. In order to guard against the possibility of deception from the accidental conveyance of foreign bodies to the surface of the scabs, I cut several of the latter obliquely through the centre, and shaved off small portions from the innermost part, but in the objects thus obtained I still found the green globules above described in numbers equally great. I do not venture to draw any conclusion from this observation of a single case, but I am inclined to believe that the chlorophyll bodies in question could not accidentally have got into the scabs.—*Virchow's Archiv*, Band x. Heft 3, 1856, page 317.

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[a] Equal in size to our penny.—Ed.

Case of Pseudo-Scleroma in a grown Person. By Dr. ALFONSO CORRADI.

THE author brought before the Medico-Chirurgical Society of Bologna the case of a girl, aged 13, who had been admitted into hospital under his care in the month of April, 1856 ; she was of very slight frame, and as she had two sisters affected with hip disease, was probably predisposed to scrofula. Her skin was in several parts of the body, especially in the neighbourhood of the bones, hardened and altered; there was more or less decided immobility of many of the articulations, and evident emaciation, especially of the limbs ; on the lower extremities were crusts of cachectic ecthyma, while the sensibility of the skin was natural. The disease, which was of about a year's standing, had commenced in the hands and feet, and appeared to have resulted from repeated exposure to cold. The girl lived three months in the hospital, and died with erysipelas on the lower limbs, attended with ulcers and gangrene.

The most important points in the autopsy, as related by the author were : the skin was neither hard nor resisting to the knife ; the muscles were attenuated and slight; the bones were fragile; and in those of the lower limbs the shafts were slender, and the medulla red and diffluent; lastly, there was tuberculous disease in one lung, and also some enlargement of the glands of the mesentery.

The author next considered the etiology and nature of the disease. He did not believe that the exposure to cold which the child had undergone was sufficient to account for her death; the latter he attributed to the presence of the scrofulous diathesis, and he pointed out that the condition of the skin had simulated the scleroma of adults, not in consequence of any change in its anatomical elements, but by reason of its adhesion to the subjacent tissues.

Dr. Gamberini inquired what distinction the author made between true and false scleroma ?

Dr. Corradi answered that true scleroma consists in induration of the skin and subjacent areolar tissue, and that he called the case he had narrated one of false scleroma, because, although during life the skin had presented the character of hardness, particularly in those depressions where every other subjacent tissue having been removed, the bone alone remained ; still, on section after death, it yielded to the knife with facility. The present case differed also, in the author's opinion, from those on record, inasmuch as the latter were not stated to be of a cachectic type, while the induration in them extended only to the areolar tissue, and the disease yielded to the use of remedies.

Dr. Gamberini believed, on the contrary, that the difference in the hardness of the skin before and after death should be attributed to the cadaveric influence, and he showed that the effect of this influence could not be estimated in the facts described by authors in the absence of necroscopic observations. As to the successful result of the cases referred to by Dr. Corradi, he observed that we are ignorant of the end of some patients. And, lastly, as to the seeming good health of the patients in the cases on record, and the cachexy of the subject of Dr. Corradi's communication, the disease being apparently limited in the former, while it had extended more deeply in the latter—all this proves nothing more (added Dr. Gamberini) than that, in the present instance, there was a complication of diseases.

Dr. Corradi replied, that it was not necessary to look upon the case as a complicated one; he thought the general scrofulous diathesis should be recognised as the cause of all the phenomena presented by the patient.

Dr. Gamberini observed that the true nature of scleroma being still unknown, it could not be said, if it were found combined with scrofula, that it depended on the latter disease; and he added, that the history narrated was in accordance with the descriptions given by Grisolle, Thirial, Forget, and others.

Cavaliere Professor Fabri, who had been present at the autopsy, being now called on to give his opinion, remarked that whatever might be the importance and the name assigned to the alterations of the skin, the more considerable lesions were situated in the muscles and bones. As to the admitted scrofulous diathesis, the changes in question could not with certainty be attributed to it, inasmuch as scleroma is not one of the known effects of scrofula, in which we chiefly find the formation of fungous tissues, abscesses, and tubercles.

Taking, therefore, into consideration, on the other hand, the apparent cause, that is, the exposure to cold, and also the nature of the affected tissues, and the mode of their alteration, it would, perhaps, be more reasonable to infer that the disease just described had been of a rheumatic character.

Dr. Corradi replied, that the phenomena to which scrofula gives rise are very various, and might also include this affection, in which there were not wanting, in his opinion, proofs of such a taint derived from the girl's antecedents, as well as from the changes in the mesenteric glands and in the bones.—*Bulletino delle Scienze Mediche di Bologna*, January, 1857, page 48.

LIBRARY

INDEX

TO THE TWENTY-THIRD VOLUME.

The Letters D. O. S. refer to the Reports of the Dublin Obstetrical Society; T. C. P. to the Transactions of the Association of the King and Queen's College of Physicians; and C. M. & S. S. to the Cork Medical and Surgical Society.

ABDOMINAL cellulitis, Bell on, *Notice*, xvii.
Aconite, poisoning by, Professor O'Connor on, C. M. & S. S., 224.
Acton, Mr., on the functions and disorders of the reproductive organs, *Rev.*, 469.
Address, Miller's, *Notice*, xix.
Air, Simpson on compressed, *Notice*, xviii.
Amputations of thigh; table of, 66.
Anatomical plates, supplement to Lizars', *Rev.*, 195.
Anatomical remembrancer, *Notice*, xviii.
Anatomy, Petrequin's medico-chirurgical, *Rev.*, 133; surgical, by Mr. Maclise, *Notice*, vi.; Todd and Bowman's physiological, *Notice*, vii.; pathological, Mr. Gamgee on, *Rev.*, 440.
Aneurism of the aorta, Dr. Finn on, C. M. & S. S., 221; brachial, the late Professor Colles on, 381.
Angina glandulosa, M. de Mussy on, *Rev.*, 462.
Aorta, thoracic, Dr. Finn on double aneurism of the, C. M. & S. S., 221; Dr. Harvey on laceration of the, C. M. & S. S., 223.
Aphorisms, obstetric, by Dr. Swayne, *Notice*, vi.
Aran, M., on blistering the cervix uteri, 392.
Army, M. Tholozan on the diseases of the French, *Notice*, xvii.
Army medical museum, Dr. Williamson on the human crania in the, 325.
Art, Forbes on nature and, in disease, *Notice*, xviii.
Artery, the late Professor Colles on wounds of the brachial, 381.
Asthma, Dr. Bergson on, *Notice*, vii.

Ballard, Dr., on artificial digestion, *Notice*, v.
Bartlett on the fevers of the United States, *Notice*, xviii.
Beale, Dr. Lionel, chemical tables by, *Notice*, viii.
Becquerel and Rodier's pathological chemistry, by Dr. Speer, *Rev.*, 202.
Bedford, Dr., on diseases of women, *Notice*, vi.
Bees and moths, Professor von Siebold on parthenogenesis in, *Rev.*, 413.
Bell on abdominal cellulitis, *Notice*, xvii.
Bennet, Dr., on uterine pathology, *Rev.*, 402.
Bergson, Dr., on asthma, *Notice*, vii.
Bladder, Coulson on the, *Notice*, xix.
Blistering the cervix uteri, Dr. Johns on, 390; M. Aran on, 392.
Boeck, Professor, on syphilization, 66.

Bowels, on the perforating ulcer of the stomach and, by Dr. J. B. Harrison, *Notice*, v.
Bowman, Mr. and Dr. Todd, physiology by, *Notice*, vii.
Brinton, Dr., on ulcer of the stomach, *Rev.*, 448.
Butcher, Mr., on excision of the knee-joint, 1.

Calisthenic exercises, a new system of, by Mr. Cost, *Rev.*, 186.
Calisthenics, by M. de Laspée, *Rev.*, 186.
Cancer, illustrations of the pathology of, by Mr. Lawrence, *Notice*, v.
Caries of the vertebræ, case of, by Professor O'Connor, C. M. & S. S., 475.
Catalogue of Mr. Toynbee's museum, *Notice*, viii.
Cavity, tubercular, Professor O'Connor on partial cicatrization of a, C. M. & S. S., 486.
Cellulitis, Bell on abdominal, *Notice*, xvii.
Cerebro-spinal complication of fever, Dr. Hudson on the, 271.
Cervix uteri, Dr. Johns on blistering the, 390; M. Aran on the same, 392.
Chatham, classification of skulls in the museum at, 327.
Chemical tables, Dr. Beale's, *Notice*, viii.
Chemistry, Becquerel and Rodier's pathological, by Dr. Speer, *Rev.*, 202.
Children's diseases, by Drs. Merei and Whitehead, *Rev.*, 182.
Cholera, Jeanneret on, *Notice*, xvii.; Baron Gustaf von Düben on quarantine in, *Trans.*, 497.
Churchill, Dr., on diseases of women, *Rev.*, 446.
Cicatrization of a tubercular cavity, Professor O'Connor on partial, C. M. & S. S., 486.
Cirrhosis of the liver, Dr. Cremen's case of, C. M. & S. S., 477.
Cleland, Dr., on the descent of the testicles, *Rev.*, 396.
Clinical study, Dr. Malcolm's introduction to, *Rev.*, 419.
College of physicians, transactions of the, 212.
Colles, Professor, selections from the unpublished manuscripts of the late, 374; on diseases of the genital organs and rectum, 374; on brachial aneurism, 381.
Collis, Dr., on vesico-vaginal fistula, 119.
Compressed air, Simpson on, *Notice*, xviii.
Contributions to the theory of epiphytes, by Dr. Koch, *Trans.*, 498.
Coote, Mr., on the treatment of syphilis, *Rev.*, 459.
Corbett, Dr. R., effect of oil of fern in a case of tapeworm, by, C. M. & S. S., 226.
Cork medical and surgical society, transactions of the, 221, 474.
Corradi, Dr., on a case of pseudo-scleroma in a grown person, *Tran.*, 503.
Cost, Mr., a new system of calisthenic exercises by, *Rev.*, 186.
Cough, the late Dr. Malcolm on, 420.
Coulson on the bladder, *Notice*, xix.
Cow-pock, Dr. Friedinger on humanized and original lymph of, *Trans.*, 489.
Crania, human, in the army medical museum, Dr. Williamson on, 325.
Cranial presentation, Dr. R. W. West on, *Rev.*, 423.
Cremen, Dr., on cirrhosis of the liver, C. M. & S. S., 477; case of tubercular disease of the lung and fatty heart by, C. M. & S. S., 479; cases of heart disease by, C. M. & S. S., 483.
Cysts of the ovary, M. Saurel on, *Trans.*, 487.

Dactylo-strangalis, case of, by Dr. Neligan, T. C. P., 212.
Decoctum Zittmanni, 113, *Note.*
De Laspée, M., calisthenics, or the elements of bodily culture, by, *Rev.*, 18.
De Mussy, M., on angina glandulosa, *Rev.*, 462.

Diagnosis in syphilis, Professor Porter on inoculation as a means of, 88.
Digestion, artificial, Dr. Ballard on, *Notice*, v.
Directory, medical, for Ireland, *Notice*, viii.
Disease, Forbes on nature and art in, *Notice*, xviii.
Diseases, female, Dr. Rigby on the constitutional treatment of, *Rev.*, 162; of children, by Drs. Merei and Whitehead, *Rev.*, 182; intra-uterine, Dr. M'Clintock on, D. O. S., 218; of the skin, Professor Hebra's clinique for, *Trans.*, 229; of the stomach and duodenum, by Dr. Reeves, *Notice*, v.; of women, Dr. Bedford on, *Notice*, vi.; Dr. Churchill on, *Rev.*, 446; of the urinary organs, Dr. Todd on, *Rev.*, 432; of India, Waring on, *Notice*, xvi.; of the French army, M. Tholozan on, *Notice*, xvii.
Domestic medicine, by M. Savory, *Notice*, vi.
Dropsies, Dr. Todd on, *Rev.*, 432.
Drunkards, Leech on the imprisonment of, *Notice*, xvii.
Düben, Baron Gustaf von, on quarantine in cholera, *Trans.*, 497.
Dublin police, medical statistics of the, *Notice*, xix.
Duncan on ovariotomy, *Notice*, xix.
Duodenum, diseases of the stomach and, by Dr. Reeves, *Trans.*, v.

Ear, diseases of the, Mr. Toynbee's catalogue of preparations of, *Notice*, viii.
Empyema, case of, by Dr. Finn, C. M. & S. S., 476.
Epilepsy, case of, by Dr. Sandham, C. M. & S. S., 483.
Epiphytes, contributions to the theory of, by Dr. Koch, *Trans.*, 498.
Excision of the knee-joint, Mr. Butcher on, 1; table of operations, 40.

Fatty heart, Dr. Cremen's case of C. M. & S. S., 479.
Faye, Professor, uterine deviations by, *Rev.*, 185.
Female diseases, Dr. Rigby on the constitutional treatment of, *Rev.*, 162.
Fern, effect of the oil of, in a case of tapeworm, C. M. & S. S., 226.
Fever, Dr. Hudson on the complications of, 271.
Fevers in the United States, Bartlett on, *Notice*, xviii.
Finn, Dr., on double aneurism of the thoracic aorta, C. M. & S. S., 221; case of empyema by, C. M. & S. S., 476.
Fistula, vesico-vaginal, Dr. Collis on, 119.
Fleming, Dr., on urethral section, 394.
Fleming, Dr. Alexander, on the "measle" of the pig, and on the wholesomeness, as food for man, of "measly" pork, 100.
Forbes on nature and art in disease, *Notice*, xviii.
French army, M. Tholozan on the diseases of the, xvii.
Friedberg, Dr., on myopathic luxation, *Trans.*, 249.
Friedinger, Dr., on humanized and original cow-pock, *Trans.*, 489.
Fuller, Dr., on rheumatism, *Notice*, vii.

Gamgee, Mr., on pathological anatomy and clinical surgery, *Rev.*, 440.
Genital organs, the late Professor Colles on diseases of the, 374.
Gland, the prostate, Dr. Hodgson on, *Rev.*, 424.
Glycerine, ioduretted, Dr. Szukits on the endermic employment of, *Trans.*, 244.
Godard, M., on the descent of the testicles, *Rev.*, 396.
Gout, Dr. Moore, on apoplectic metastasis in, T. C. P., 215.
Guy's hospital reports, *Notice*, iv.

Hair, Holland on the, *Notice*, xviii.
Hands and feet, Dr. Tobiesen on tonic spasms in the, *Trans.*, 239.
Hall on Torquay, *Notice*, xvi.

Hand-book of physiology, Dr. Kirkes', *Notice*, iv.
Harrison, Dr. J. B., on the perforating ulcer of the stomach and bowels, *Notice*, v.
Harrogate, Dr. Piggott on, *Notice*, vii.
Harvey, Dr., on laceration of the aorta, C. M. & S. S., 223.
Heart, Dr. Popham's case of rupture of the left ventricle of the, C. M. & S. S., 474; Dr. Cremen's case of fatty, C. M. & S. S., 479; disease of, Dr. Cremen's cases of, C. M. & S. S., 483.
Hebra, Professor, clinique for diseases of the skin, *Trans.*, 229.
Hematemesis, case of, by Dr. Popham, C. M. & S. S., 485.
Hematuria, case of, followed by suppression of urine, by Dr. A. Smith, T. C. P., 213.
Hermaphroditism, case of supposed, by the late Professor Colles, 377.
Hernia, tumours mistaken for, the late Professor Colles on, 377.
Heyfelder, Dr. Oscar, on resection of both upper jaw-bones, 107.
Hints, hygienic, by Dr. Swayne, *Notice*, vi.
Hobart, Dr. S. H., case of tumour by, C. M. & S. S., 481.
Hodgson, Dr., on the prostate gland, *Rev.*, 424.
Holland on the hair, *Notice*, xviii.
Hospital reports, Guy's, *Notice*, iv.
Hudson, Dr., on the complications of fever, 271.
Hydrocele, mistaken for hernia, the late Profesor Colles on, 378.
Hygienic hints, by Dr. Swayne, *Notice*, vi.

Imprisonment of drunkards, Leech on the, xvii.
India, Waring on the diseases of, *Notice*, xvi.
Inguinal hernia, the late Professor Colles on tumours mistaken for, 377.
Inoculation, Professor Porter on, as a means of diagnosis in syphilis, 88.
Intestinal disease, Dr. Sandham's case of, C. M. & S. S., 478.
Ioduretted glycerine, Dr. Szukits on the endermic employment of, *Trans.*, 244.
Ireland, medical directory for, *Notice*, viii.
Iron, M. E. Robiquet on the pyrophosphate of, *Trans.*, 494.

Jaw-bones, Dr. Heyfelder on the resection of both upper, 107; operation of the resection described, 116.
Jeanneret on cholera, *Notice*, xvii.
Johns, Dr., on blistering the cervix uteri, 390.
Jones, Mr. T. Wharton, on defects of sight, *Rev.*, 153.
Journal, Liverpool medico-chirurgical, *Notice*, viii.

Kirkes, Dr., hand-book of physiology by, *Notice*, iv.
Knee-joint, Mr. Butcher on excision of the, 1.
Koch, Dr., on the theory of epiphytes, *Trans.* 498.

Laceration of the aorta, Dr. Harvey on, C. M. & S. S., 223.
Lawrence, Mr., on the pathology of cancer, *Notice*, v.
Laycock, Dr., on the principles of medical observations, *Rev.*, 145.
Lectures, clinical, on urinary disease, by Dr. Todd, *Rev.*, 432.
Leech on the imprisonment of drunkards, *Notice*, xvii.
Life, the change of, in health and disease, Dr. Tilt on, *Rev.*, 464.
Liver, cirrhosis of the, Dr. Cremen's case of, C. M. & S. S., 477.
Liverpool medico-chirurgical journal, *Notice*, viii.
Lizars', Mr., anatomical plates, supplement to, *Rev.*, 195.
Lizars on tobacco, *Notice*, xvii.
Lobelia inflata, Dr. Wood on, 197.
Lung, Dr. Cremen's case of tubercular disease of the, C. M. & S. S., 479.
Luxation, myopathic, Dr. Friedberg on, *Trans.*, 249.

Lymph of cow-pock, humanized and original, used in the vaccine institution of Vienna by Dr. Friedinger, *Trans.*, 489.

M'Clintock, Dr., on intra-uterine diseases, D.O.S., 218.
Mackenzie, Dr., on ophthalmology, *Rev.*, 153.
Maclise's, Mr., surgical anatomy, *Notice*, vi.
Malcolm, the late Dr., an introduction to clinical study by, *Rev.*, 419.
Maniacs, Dr. Williamson on the skulls of, 332.
Materia medica, Dr. Wood on, *Rev.*, 196.
Measly pork, Dr. A. Fleming on, 100.
Medical observation, Dr. Laycock on the principles of, *Rev.*, 145.
Medical statistics of the Dublin police, *Notice*, xix.
Medical and surgical society of Cork, transactions of the, 221.
Medical directory for Ireland, *Notice*, viii.
Medicine, principles of, by Dr. Williams, *Notice*, v.; domestic, by Mr. Savory, *Notice*, vi.
Medico-chirurgical anatomy, Petrequin's, *Rev.*, 133.
Medico-chirurgical journal, the Liverpool, *Notice*, viii.
Merei, Dr., and Dr. Whitehead, on the diseases of children, *Rev.*, 182.
Metastasis, apoplectic, in gout, Dr. Moore on, T.C.P., 215.
Miller's address, *Notice*, xix.
Mind, the science of, or pneumatology, *Rev.*, 156.
Moore, Dr., on apoplectic metastasis in gout, T.C.P., 215.
Moths and bees, Professor von Siebold on parthenogenesis in, *Rev.*, 413.
Museum, army medical, Dr. Williamson on the human crania in the, 325.
Myelitis, Schroeder van der Kolk on, *Trans.*, 233.
Myopathic luxation, Dr. Friedberg on, *Trans.*, 249.

Nature and art in disease, Forbes on, *Notice*, xviii.
Neligan, Dr., case of strangulation of the toe by, T.C.P., 212.
Nervous system, M. Parchappe on the, *Rev.*, 174.

Observation, medical, Dr. Laycock, on the principles of, *Rev.*, 145.
Obstetric aphorisms, by Dr. Swayne, *Notice*, vi.
Obstetrical Society of Dublin, proceedings of the, 218.
O'Connor, Professor, on poisoning by aconite, C. M. & S. S., 224; case of caries of the vertebræ by, C.M. & S.S., 475; on partial cicatrization of a tubercular cavity, C.M. & S.S., 486.
Oil of fern, effect of, in a case of tapeworm, by Dr. Corbett, C.M. & S.S., 226.
Old age, Dr. Hodgson on the enlargement of the prostate gland in, *Rev.*, 424.
Ophthalmology, Dr. Mackenzie and Mr. Jones on, *Rev.*, 153.
Organs, genital, the late Professor Colles on diseases of the, 374.
Ovariotomy, Duncan on, *Notice*, xix.
Ovary, M. Saurel on cysts of the, *Trans.*, 487.

Parchappe, M., on the nervous system, *Rev.*, 174.
Parthenogenesis in moths and bees, Professor von Siebold on, *Rev.*, 413.
Pathological chemistry, Becquerel and Rodier's, translated by Dr. Speer, 202.
Pathological Society of London, transactions of, *Notice*, iv.
Pathology, uterine, Dr. Bennet on, *Rev.*, 402.
Perforating ulcer of the stomach and bowels, Dr. J. B. Harrison on, *Notice*, v.
Penis, rupture of the, the late Professor Colles on, 375.
Petrequin's medico-chirurgical anatomy, *Rev.*, 133.
Pharmacology, Dr. Wood on, *Rev.*, 196.

Physicians, transactions of the college of, 212.
Physiology, hand-book of, by Dr. Kirkes, *Notice*, iv.; Todd and Bowman's, *Notice*, vii.
Pig, Dr. A. Fleming on the measle of the, 100.
Piggott, Dr., on Harrogate, *Notice*, vii.
Plates, anatomical, supplement to Lizars', *Rev.*, 195.
Poisoning by aconite, Professor O'Connor on, C.M. & S.S., 224.
Police, Dublin, medical statistics of the, *Notice*, xix.
Popham, Dr., case of rupture of the left ventricle of the heart by, C. M. & S.S. 474; case of hematemesis by, C. M. & S. S., 485.
Pork, measly, Dr. A. Fleming on, 100.
Porter, Dr., essays on syphilis by, 88, 257.
Prostate gland, Dr. Hodgson on the, *Rev.*, 424.
Pseudo-scleroma in a grown person, case of, by Dr. Corradi, *Trans.*, 503.
Pyrophosphate of iron, M. E. Robiquet on, *Trans.*, 494.

Quarantine in cholera, Baron Gustaf von Düben on, *Trans.*, 497.

Rectum, the late Professor Colles on diseases of the, 374.
Remembrancer, the anatomical, *Notice*, xviii.
Reports, Guy's Hospital, *Notice*, iv.
Reproductive organs, Mr. Acton on the functions and disorders of the, *Rev.*, 469.
Resection of both upper jaw-bones, Dr. Heyfelder on, 107; description of the operation, 116.
Rheumatism, Dr. Fuller on, *Notice*, vii.
Rigby, Dr. Edward, on the constitutional treatment of female diseases, *Rev.*, 162.
Robiquet, M., on the therapeutic employment of the pyrophosphate of iron, *Trans.*, 494.
Ross on vaccination, *Notice*, xvii.
Roux, M., forty years of practical surgery by, *Rev.*, 189.
Rupture of the penis, the late Professor Colles on, 375.

Sandham, Dr., case of intestinal disease by, C. M. & S. S., 478; case of epilepsy by, C. M. & S. S., 483.
Saunders, Dr., hygienic hints by, *Notice*, vi.
Saurel, M., on cysts of the ovary, *Trans.*, 487.
Savory, Mr., compendium of domestic medicine by, *Notice*, vi.
Schroeder van der Kolk on myelitis, *Trans.*, 233.
Science of mind, or pneumatology, the, *Rev.*, 156.
Scleroma, false, in a grown person, Dr. Corradi on, *Trans.*, 503.
Seaton on vaccination, *Notice*, xvii.
Siebold, Professor, on parthenogenesis in moths and bees, *Rev.*, 413.
Sight, defects of, Mr. Jones on, *Rev.*, 153.
Simpson on compressed air. *Notice*, xviii.
Skin, diseases of the, Professor Hebra's clinique for, *Trans.*, 229; Wilson on the, *Notice*, xviii.
Skulls, classification of, in the museum at Chatham, 327; of maniacs, 332.
Smith, Dr. Aquilla, case of hematuria followed by suppression of urine, by, T. C. P., 213.
Society, Dublin obstetrical, proceedings of the, 218; Cork medical and surgical, transactions of the, 221, 474; pathological, of London, transactions of the, *Notice*, iv.
Spasms, tonic, in the hands and feet, Hr. Tobiesen on, *Trans.*, 329.
Speer, Dr., Becquerel and Rodier's pathological chemistry by, *Rev.*, 202.
Stomach and bowels, on the perforating ulcer of, by Dr. Harrison, *Notice*, v.; and duodenum, diseases of the, by Dr. Reeves, *Notice*, v.

Statistics, medical, of the Dublin police, *Notice*, xix.
Stomach, ulcer of the, Dr. Brinton on, *Rev.*, 448.
Strangulation of the toe, case of, by Dr. Neligan, T. C. P., 212.
Stricture of the urethra, Dr. Wilmot on, 310.
Suppression of urine, Dr. A. Smith's case of hematuria followed by, T. C. P., 213.
Surgery, forty years of practical, by M. Roux, *Rev.*, 189; principles of, by Mr. Syme, *Notice*, iv.; clinical, Mr. Gamgee on, *Rev.*, 440.
Surgical anatomy, by Mr. Maclise, *Notice*, vi.
Swayne, Dr., obstetric aphorisms by, *Notice*, vi.
Syme, Mr., principles of surgery by, *Notice*, iv.
Syphilis, Dr. Porter on, 88, 257; value of inoculation as a means of diagnosis of, 88; Mr. Coote on the treatment of, *Rev.*, 459.
Syphilization, Professor Boeck on, 77; mode of producing, 81.
System, nervous, M. Parchappe on the, *Rev.*, 174.
Szukits, Dr., on ioduretted glycerine, *Trans.*, 244.

Tables of operations of excision of the knee-joint, 40; of amputation of the thigh, 66; Dr. Beale's chemical, *Notice*, viii.
Tapeworm, effect of oil of fern in a case of, by Dr. Corbett, C. M. & S. S., 226.
Testes, misplacement of, the late Professor Colles on, 376; Dr. Cleland on the descent of the, *Rev.*, 396; M. Godard on, *Rev.*, 396.
Therapeutics and pharmacology, Dr. Wood on, *Rev.*, 196.
Tholozan, M., on the diseases of the French army, *Notice*, xvii.
Tilt, Dr., on the change of life in health and disease, *Rev.*, 464.
Tobacco, Lizars on, *Notice*, xvii.
Tobiesen, Hr., on tonic spasms in the hands and feet, *Trans.*, 239.
Todd, Dr., on urinary disease, *Rev.*, 432.
Todd, Dr., and Mr. Bowman, physiology by, *Notice*, vii.
Toe, strangulation of, case of, by Dr. Neligan, T. C. P., 212.
Torquay in its medical aspect, Hall on, *Notice*, xvi.
Toynbee, Mr., catalogue of preparations of diseases of the ear, *Notice*, viii.
Transactions of the college of physicians, 212; of the Dublin obstetrical society, 218; of the Cork medical and surgical society, 221; of the pathological society of London, *Notice*, iv.
Tubercular cavity, Professor O'Connor on partial cicatrization of, C. M. & S. S., 486.
Tubercular disease of the lung, Dr. Cremen's case of, C. M. & S. S., 479.
Tumour, case of, by Dr. Hobart, C. M. & S. S., 481.
Tumours mistaken for inguinal hernia, the late Professor Colles on, 377.

Ulcer of the stomach, Dr. Brinton on, *Rev.*, 448.
Ulcer, perforating, of the stomach and bowels, by Dr. Harrison, *Notice*, v.
Urethra, Dr. Wilmot on stricture of the, 310.
Urethral section, Dr. Fleming on, 394.
Urinary organs, Dr. Todd on disease of the, *Rev.*, 432.
Uterine deviations, by Professor Faye, *Rev.*, 185.
Uterine pathology, Dr. Bennet on, *Rev.*, 402.

Vaccination, Ross on, *Notice*, xvii.; Seaton on, *Notice*, xix.
Vaccine institution in Vienna, on humanized and original lymph of cow-pock used in the, *Trans.*, 488.
Vertebræ, Professor O'Connor's case of caries of the, C. M. & S.S., 475.

Vesico-vaginal fistula, Dr. Collis on, 119.
Vienna, on humanized and original lymph of cow-pock, used in the vaccine institution in, by Dr. Friedinger, *Trans.*, 489.

Waring on the diseases of India, *Notice*, xvi.
West, Dr. R. W., on cranial presentations, *Rev.*, 423.
Whitehead, Dr., and Dr. Merei, children's diseases by, *Rev.*, 182.
Williams, Dr. principles of medicine by, *Notice*, v.
Williamson, Dr. on the human crania in the army medical museum, 325.
Wilmot, Dr., on stricture of the urethra, 310.
Wilson on diseases of the skin, *Notice*, xviii.
Women, diseases of, Dr. Bedford on, *Notice*, vi. Dr. Churchill on, *Rev.*, 446.
Wood, Dr., on therapeutics and pharmacology, *Rev.*, 196.

Zittmann's decoction, 113, *Note.*

END OF VOL. XXIII.